Canadian Journal of PUBLIC HEALTH

The National Journal of Preventive Medicine

UNIVERSITY OF MICHIGAN

JUN 2 1958

PUBLIC HEALTH LIBRARY

Volume 49 **JUNE 1958** **Number 6**

FATAL ACCIDENTS IN THE HOME
Edward J. Brower

ANTIBODIES TO ADENOVIRUS AND TO PSITTACOSIS IN EASTERN ARCTIC ESKIMOS
J. A. Hildes, J. C. Wilt, F. J. Stanfield

THE PREVENTION OF CARCINOMA OF THE LUNG
John O. Godden

INTEGRATION OF SOCIAL WELFARE IN TUBERCULOSIS CONTROL PROGRAMS
W. G. Dixon

HEALTH SERVICES FOR PUBLIC ASSISTANCE RECIPIENTS IN CANADA
Lillian Boes

IMPREGNATED CORDS IN THE CONTROL OF HOUSE FLIES
Donald M. Black and Steve Mazur

Published Monthly by the
CANADIAN PUBLIC HEALTH ASSOCIATION
150 COLLEGE STREET, TORONTO 5

SCHOOL OF HYGIENE

UNIVERSITY OF TORONTO

Postgraduate Training for Physicians, Veterinarians, Dentists, and other University Graduates

DIPLOMA AND CERTIFICATE COURSES

Diploma in Public Health (D.P.H.)
Diploma in Industrial Hygiene (D.I.H.)
Diploma in Veterinary Public Health (D.V.P.H.)
Diploma in Dental Public Health (D.D.P.H.)
Diploma in Hospital Administration (Dip.H.A.)
Diploma in Bacteriology (Dip. Bact.)
Certificate in Public Health (C.P.H.)

COURSES FOR PHYSICIANS

Physicians may enrol in the following courses: D.P.H., D.I.H., Dip.H.A., Dip. Bact.

The *Diploma in Public Health* course provides the basic academic instruction needed for physicians entering the field of Public Health as Medical Officers of Health, or as physicians working full-time or part-time in specialized branches such as infectious diseases, tuberculosis, epidemiology, bacteriology, medical administration, health insurance.

The *Diploma in Industrial Hygiene* course provides the basic academic instruction needed for physicians entering the field of occupational medicine, especially industrial health, either as full-time or part-time medical officers in plants or industrial organizations. It is not now necessary for candidates entering this course to have first taken the D.P.H. course.

The *Diploma in Hospital Administration* course provides instruction for physicians and other university graduates taking up careers as hospital administrators.

The *Diploma in Bacteriology* course provides basic academic instruction in the following branches of medical microbiology: systematic and applied bacteriology and virology, public health bacteriology, mycology, parasitology; a course in statistical methods forms part of the curriculum.

A year of attendance, provided a diploma is obtained, satisfies part of the requirements for the Certification or Fellowship programs of the Royal College of Physicians and Surgeons of Canada in the approved medical specialties.

COURSES FOR VETERINARIANS AND DENTISTS

Veterinarians may enrol in the Diploma in Veterinary Public Health and the Diploma in Bacteriology courses.

Dentists may enrol in the Diploma in Dental Public Health and the Diploma in Bacteriology courses. These courses provide suitable training for those intending to enter public service, or to take up careers in teaching or research.

COURSES FOR OTHER UNIVERSITY GRADUATES

Graduates with degrees in arts or science may enrol in the Dip.H.A., Dip. Bact. or C.P.H. courses. The C.P.H. may be taken as a general course in public health administration, or as a course providing specialized training in nutrition, sanitation, bacteriology, or public health education.

DURATION OF COURSES

All courses are of 32 weeks' duration except the Dip.H.A. course which extends over two years, the second year being spent as a resident in hospital administration. Courses commence in early September of each year.

BURSARY ASSISTANCE AND FELLOWSHIPS

Bursary assistance may be available to candidates approved by Provincial Departments of Health. Overseas candidates should consult their government about Fellowships.

FOR FURTHER INFORMATION write to: Dr. A. J. Rhodes,
Director, School of Hygiene, University of Toronto, Toronto 5, Ontario.

Everything in scientific instruments and laboratory supplies

available quickly . . . when you specify CENCO

Wherever you are . . . whatever your need . . . from a simple instrument to a completely equipped laboratory . . . it's available quickly when you specify Cenco. A preferred source for over 57 years, Cenco has grown to a position of leadership with the best and most complete line of scientific instruments and laboratory supplies in the world. With 12 branches, strategically located from coast to coast, we're able to make prompt delivery of any of the 15,000 items in our line. So, for service . . . dependability . . . and complete satisfaction . . . be sure to specify Cenco.

Branches and Warehouses at:

Mountainside, New Jersey
237 Sheffield Street
ADams 3-2000

Cambridge 42 (Boston), Mass.
79 Amherst Street
TRowbridge 6-3400

Birmingham 4, Alabama
3232 Eleventh Avenue, North
FAirfax 4-2433

Chicago 13, Illinois
1700 Irving Park Road
WEllington 5-8600

Los Angeles 22, California
6446 Telegraph Road
RAymond 3-6141

Santa Clara, California
1040 Martin Avenue
CHerry 8-1600

Tulsa 20, Oklahoma
621-23 E. 4th Street
Gibson 7-3141

Houston 3, Texas
2215 McKinney Avenue
CApitol 7-5359

Montreal 14, Quebec
7275 St. Urbain Street
CRescent 2-8263

Toronto 4, Ontario
146 Kendal Avenue
WAlnut 3-2421

Vancouver 3, B.C.
1206 Homer Street
MUtual 4-5384

Ottawa, Ontario
130 Sparks Street
2-1601

For the latest developments in laboratory apparatus, instruments, methods . . . and information about technical organizations . . . write for free copy of CENCO NEWS CHATS.

CENCO
The most complete line of scientific instruments and laboratory supplies in the world
RS

CENTRAL SCIENTIFIC COMPANY
OF CANADA, LIMITED

146 KENDAL AVE., TORONTO 4, ONTARIO • 7275 ST. URBAIN ST., MONTREAL 14, QUEBEC
1206 HOMER STREET, VANCOUVER 3, B. C. • 130 SPARKS STREET, OTTAWA, ONTARIO
Sole distributors in Canada of RS and AC-ME oil and gas testing apparatus made by Refinery Supply Company, Tulsa, Oklahoma

Canadian Journal of
PUBLIC HEALTH

VOLUME 49 JUNE 1958 NUMBER 6

CONTENTS

ARTICLES:

Fatal Accidents in the Home 225
Edward J. Brower, M.A.

Antibodies to Adenovirus and to Psittacosis in Eastern Arctic Eskimos 230
J. A. Hildes, J. C. Wilt and F. J. Stanfield

The Prevention of Carcinoma of the Lung 232
John O. Godden, M.D.

Integration of Social Welfare in Tuberculosis Control Programs 240
W. G. Dixon, B.A., A.M.

Health Services for Public Assistance Recipients in Canada 244
Lillian Boes, M.S.W.

Impregnated Cords in the Control of House Flies 248
Donald M. Black, M.D., D.P.H. and Steve Mazur, B.Sc., C.S.I. (C)

EDITORIAL SECTION:

Epidemiological Services in the Department of National Health and Welfare 254

INDUSTRIAL HYGIENE:

Lost-Time Morbidity Experience in Some Industries in Ontario During 1956 256
Division of Industrial Hygiene and Division of Medical Statistics, Ontario Department of Health.

CANADIAN PUBLIC HEALTH ASSOCIATION, Annual Report, 1957-1958, Part I:

Report of the Honorary Secretary 258
G. W. O. Moss, M.D., D.P.H.

Report of the Honorary Treasurer 260
William Mosley, M.D., D.P.H.

Report of the Editorial Board 263
R. D. Defries, C.B.E., M.D., D.P.H., LL.D., Editor.

DEPARTMENTS:

Association News 265
News Notes 266
Books and Reports 270

The Canadian Journal of Public Health is published monthly by the Canadian Public Health Association. Editorial and business offices, 150 College Street, Toronto 5, Ontario. Subscription in Canada $3.00 a year, payable in advance. Single copies 50 cents. Effective June 1, 1958, the subscription rate outside Canada will be $5.00 a year. Authorized as second-class mail, Post Office Department, Ottawa.

Contents may be reproduced only with the permission of the Editorial Board.

Canadian Journal of
PUBLIC HEALTH

VOLUME 49 TORONTO, JUNE 1958 NUMBER 6

Fatal Accidents in the Home[1]

EDWARD J. BROWER[2], M.A.

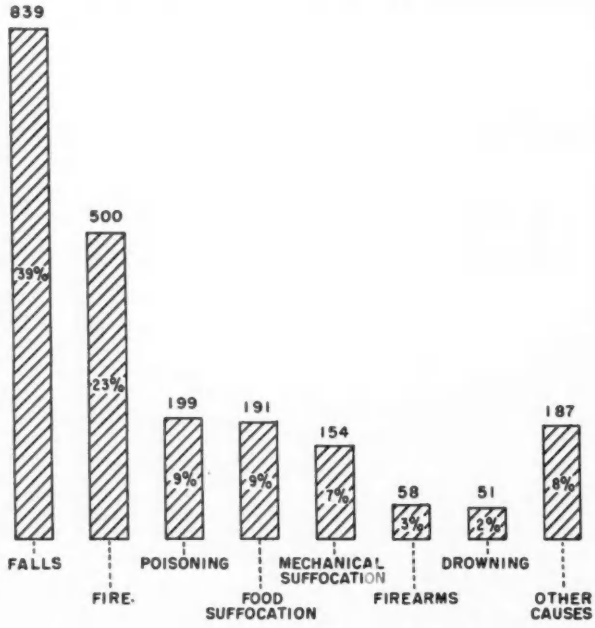
STILL fresh from a remarkable victory over communicable diseases, the public health movement faces a new and formidable challenge in the realm of violent deaths. Thirty years ago, there were in Canada, twice as many deaths from infective and contagious diseases as from violence; today, there are more than four times as many deaths from violence as from communicable diseases. Of special significance, from the viewpoint of life-years lost, is the fact that accidents form the leading cause of death for children and the age-specific rates among children, adolescents and old people have been steadily rising. In 1956, out of 4,208 transport accidents, motor vehicles accounted for 3,559 while of 4,992 non-transport accidents no less than 2,179 were classified as home accidents.

In Canada, over the past decade, almost 22,000 persons have lost their lives as a result of home accidents. The 1956 home accident fatality rate was 13.6 per 100,000 population with males at 13.4 and females 13.7. For infants the rate was more than 90 and for the age group of 70 years and over the rate exceeded 100. Fatalities alone, of course, do not fully measure the tragedy involved. Special studies (1) have provided evidence that for each accidental home death, as many as 150 injuries resulting in disability for a period of 24 hours or more, and four injuries resulting in permanent disability, may occur; furthermore, for every serious injury there are possibly four or five injuries resulting in disability of less than one day.

Of the 2,179 fatal home accidents during 1956, seven specific causes accounted for 1,992 or over 90% of the total. Heading the list was accidental falls which were responsible for 839 fatalities or 39% of total accidental home fatalities, followed by fire with 500 fatalities (23%), poisoning 199 fatalities

[1]This paper was presented at the forty-fifth annual meeting of the Canadian Public Health Association May 27–29, 1957. Before publication, the data were brought up-to-date to include 1956 mortality figures. Further information on home accidents will be available in a forthcoming report from the Dominion Bureau of Statistics.

[2]Vital Statistics Section, Dominion Bureau of Statistics, Ottawa.



(9%), food suffocation 191 fatalities (nearly 9%), mechanical suffocation 154 fatalities (7%), firearms 58 (3%) and drowning 51 (2%).

Age and Sex of Victims

Fatal home accidents pose a particular problem at the two extremes of life and victims under 5 years and over 69 accounted for two-thirds of these fatalities in 1956. Nearly 31% of all the fatal home accidents occurred in the former group and 36% in the latter. The rate for accidental home fatalities varied from a low of less than 3 per 100,000 population for the age group 15–29 to over 100 for the age group of 70 and over. Males and females accounted for approximately equal fatalities as a whole from home accidents in 1956, 1,094 males to 1,085 females. Yet in the broad working period from 15 to 70 when males generally would not be around the house for a large part of the day, male fatalities from accidents at home exceeded female deaths by 362 to 224. In the age group of 70 and over there was a female preponderance of 504 compared with 275 males.

Home Accident Rates per 100,000 Population

	Both Sexes	Males	Females
All ages	13.6	13.4	13.7
Under 1 year	93.6	100.0	86.8
1–4	17.8	19.8	15.8
5–14	4.4	5.1	3.7
15–29	2.8	3.6	2.0
30–49	5.4	7.0	3.8
50–69	11.1	12.3	9.7
70 and over	100.2	72.0	127.6

The different age groups are susceptible to particular types of home accidents. For children under 15 the greatest danger arises from fire which accounts for nearly 30% of the victims. Fire is closely followed by food and mechanical suffocation as causes of death. In the age groups from 15–69 fire remains a greater danger than any other cause of home fatality and is followed by falls and poisoning. The impact of fatal falls on the age groups of 70 and over is difficult to over-emphasize as they account for more than four-fifths of the total home accident fatalities in the age group; most of the remainder are caused by fire and poisoning.

Geographic and Seasonal Variations

The provincial death rates in 1956 for home accident fatalities varied widely from the national average of 13.6 per 100,000 population. New Brunswick had the highest rate at 20 followed by British Columbia with 19, Ontario with over 15 and Nova Scotia with 13. Saskatchewan, on the other hand, had a low rate of only 7.5 per 100,000 population. Alberta and Quebec had a rate of 11.

While the fall and winter periods present the greatest danger for home accidents as a whole, there are many threats at other seasons. Accidental falls take a fairly regular toll of men and women every month of the year. The danger from fire is at its height from November until March. Poisoning is a particular threat in every season except summer. Food and mechanical suffocation show a greater frequency in the fall and winter months. Home accidents occur regularly on every day of the week but many studies have pointed up the particular dangers of Saturday and Sunday. Other studies have proven home accidents to be most frequent during the period 4:00–7:00 p.m. with the period from 10:00 a.m. to 1:00 p.m. the next most dangerous time. These are, of course, the two three-hour periods of greatest household activity.

Accidental Falls

Of 1,582 fatal accidental falls in 1956 no less than 839 or 53% occurred in the home. The 306 male and 533 female home accident victims comprised nearly 40% of all accidental home fatalities. It is particularly noteworthy that the largest proportion of falls, amounting to 256 fatalities, occurred on the same level; there were 177 fatalities on stairs, 9 from ladders and 151 other fatal falls from one level to another. The special hazard of falls for older people is indicated by the fact that those of 50 and over accounted for 90% of total fatalities. Fatal falls accounted for 82% of all home accidents suffered by the age group of 70 years and over compared with 27% of all fatal home accidents for the age group 15–69 and only 6% of all fatal home accidents suffered by children of 14 and under.

Fire

This is the second largest category of home accidents and in 1956 was responsible for 500 deaths in Canada. The home location accounted for 80% of the total 628 fire fatalities. Home fire fatalities comprised 278 males and 222 females. From the viewpoint of life-years lost it was shocking to observe that in 1956 no less than 232 children under 15 years of age died as a result of fires. Fire is a great peril to those over 70 in which age group

some 82 lives were lost. A vital policy to be stressed in fire prevention is adequate supervision of children; many wish it could be made a criminal offence to leave a child unattended. In addition, fire departments have emphasized the importance of the removal of old papers, rags and rubbish, especially from cellars and attics; the installation of adequate wiring and proper fuses in electrical systems; and protection against over-heated stovepipes, faulty electrical cords, and related hazards.

Accidental Poisoning

Accidental poisoning excludes suicides, homicides and chronic poisoning from narcotic, soporific and analgesic drugs. Accidental poisoning fatalities at home cost 199 lives in 1956 or 61% of the total 328 deaths from accidental poisoning as a whole. Poisoning accounted for 9% of all accidental home fatalities and was the third major cause of home accidents. Males predominated with 117 lives lost compared with 82 females. Although, generally speaking, poisoning was a problem for both sexes at all ages, nearly 60% of fatalities were between the ages of 30 and 70.

Utility gas accounted for 39% of poisonings in the home involving 78 lives, followed by barbituric acid and derivatives with 33 fatalities, motor vehicle exhaust gas 31 fatalities and alcohol 10 fatalities excluding victims of alcoholic psychosis and alcoholism. (Non-accidental deaths from alcoholism claimed 114 victims in 1956.) In the case of poisoning by utility gas, 43 males died compared with 35 females, in deaths from motor-vehicle exhaust gas there were only 2 females compared with 29 males and in deaths from alcohol 7 males were lost compared with only 3 females. A strong contrast is provided by barbituric acid and derivatives in which 22 females lost their lives compared with 11 males.

Food Suffocation

Food suffocation at home accounted for 191 deaths in 1956 or two-thirds of the over-all total of 290 such deaths. The sex ratio for home deaths from this cause was 105 males to 86 females. This title includes injuries from accidental inhalation or ingestion of food into larynx and other respiratory passages, with resulting obstruction or suffocation. It is difficult to over-emphasize this problem for children under one year as infant deaths from this cause amounted to 161 or 84% of the total.

Mechanical Suffocation

This title includes asphyxia from accidental mechanical suffocation in bed and cradle, except by ingestion or inhalation of a foreign object. Of the 203 deaths from this cause in 1956, 154 took place in the home. There were 91 males involved compared with 63 females. Mechanical suffocation was almost entirely a problem of infant deaths involving smothering and suffocation in bed, cot, cradle and perambulator. No less than 144 or 93% of these deaths were of infants under one year of age.

Firearms

In addition to various kinds of guns this category includes deaths from dynamite and other explosives. It is rather surprising to observe that 58 of

the total 163 deaths from this cause occurred in the home environment. There were 47 male fatalities in the home in 1956 compared with only 11 female fatalities. Of the total 58 deaths, 48 or 84% were from 5 to 49 years of age. Precautions against this threat must begin early as there were 15 fatal accidents in the 5–14-year age group involving 9 males and 6 females and accounting for 26% of home firearm fatalities.

Drowning and Submersion

It is perhaps quite unexpected to observe that 51 of Canada's drowning fatalities occurred at home. As with all drownings the male sex predominated, in the case of home drownings by 36 to 15. Particular attention should be paid in any preventive program to the age group from 1 to 5 years. This group accounted for no less than 30 deaths of nearly 60% of the total home drownings in 1956. The danger to boys is particularly noteworthy in that the sex ratio comprised 25 males to 5 females.

Conclusions

Home accidents today present a challenge to the public health movement in North America comparable to the threat of infectious disease a few decades ago. The problem is intensified in that it is not the responsibility of any one group or single discipline but requires co-operative efforts by administrators, public health nurses and doctors, sanitarians and health educators. There must be a two-pronged attack on personal and environmental hazards at the community and family levels. The potential threat of home accidents grows out of environmental hazards such as faulty design and construction of houses, inadequate repairs and maintenance, and careless and haphazard housekeeping. Important too, and presenting a formidable challenge to public health are such human failings as carelessness, preoccupation and impulsiveness.

Statistics on home accident fatalities have revealed that in spite of greatly improved living conditions the home remains a very dangerous place in which over 2,000 persons lose their lives by accidents every year. During 1956 over 800 lives were lost by falls, 500 in fires, nearly 350 by suffocation and almost 200 by poisonings. This fatal toll was concentrated at the two extremes of life; while the mortality rate per 100,000 population for all ages was 13.6 it rose above 90 for the infant population and over 100 for those over 69. Among the old, falls were by far the greatest menace while the very young were faced with particular danger from fire and suffocation. Poisoning took many adults in the prime of life. There were many more female victims of falls than male victims and many more male than female victims of firearms and drowning. Fire, poisoning and suffocation took many of each sex. There were wide regional differences in home accident rates from 7.5 per 100,000 population in Saskatchewan to 20 per 100,000 in New Brunswick. The home was a dangerous center of activity all year but the major perils such as fire and falls were particularly threatening in the fall and winter seasons.

REFERENCE

1. Lossing, E. H. and Goyette, R. B.: Canad. J. Pub. Health 1957, *48*: 131.

Antibodies to Adenovirus and to Psittacosis in Eastern Arctic Eskimos

J. A. HILDES, J. C. WILT AND F. J. STANFIELD[1]

CHRONIC cough and frequent "colds" are common complaints of the Eskimos. In non-tubercular patients the clinical diagnosis of "flu" is often made. In addition to bacterial infections (1) and protozoal infestations (2), it seems probable that virus infections play an important part in these clinical syndromes.

In the course of the medical survey conducted by the Indian and Northern Health Service in the Eastern Arctic in 1957, blood samples were taken from 241 Eskimos for virus antibody studies. Preliminary to a survey of neutralizing antibodies in these sera, complement fixation tests were carried out against influenza A and B, psittacosis and adenovirus. In the present communication we wish to draw attention to the number of cases with significant antibody titres against adenovirus and psittacosis.

Methods

The communities visited are listed in the table. Approximately 70% of the estimated population of these communities was surveyed, the remainder being away hunting, etc. The 241 samples were taken at random from adults only. The blood was taken from an antecubital vein, allowed to clot and the serum separated under sterile conditions. The samples were then kept frozen until they were examined. Complement fixation tests were carried out for antibodies against the four viruses mentioned above. Serological tests for syphilis were done on all sera showing a titre against psittacosis.

Results and Discussion

Only one community—Frobisher Bay—gave a history suggestive of a recent influenza-like epidemic and 80% of the sera from this place had antibodies to influenza A virus. Other communities showed only sporadic cases of such antibodies and none of the sera tested had antibodies to influenza B.

The table shows the number of cases with significant antibody titres against adenovirus and psittacosis.

Thirty-five percent of the sera had antibodies against adenovirus. This probably represents prior infection with that virus. A varying proportion of the sera from the different communities had antibodies; at Arctic Bay and at Scott Inlet the incidence was over 80%. In these communities the "colds" during the previous winter were probably due to this infection. To our knowledge, adenovirus infection has not been previously reported in Eskimos but

[1]Defence Research Board Arctic Medical Research Unit; Department of Physiology and Medical Research; and Department of Bacteriology, University of Manitoba.

it is not surprising in view of the considerable amount of upper respiratory tract infection reported in these people.

The finding of antibodies against psittacosis in approximately 15% of samples was unexpected. This, however, does not necessarily have the same significance as noted for adenovirus, since psittacosis antibodies are not always specific for psittacosis but may represent prior experience with several other diseases such as lymphogranuloma venereum, syphilis, cat-scratch fever, meningo-pneumonitis, trachoma and inclusion conjunctivitis. The negative Wasserman tests on all the sera showing psittacosis antibodies rule out syphilis. It seems unlikely that the antibodies represent previous attacks of lymphogranuloma or cat-scratch fever but it is quite possible that they indicate infection with trachoma or inclusion conjunctivities, particularly in view of the common incidence in Eskimos of corneal scarring. In Alaska such scars have been attributed to phlyctenular keratitis (3). On the other hand, it is quite possible that the antibodies represent infection with psittacosis as Eskimos are known to eat raw birds.

Summary

In blood samples from 241 apparently healthy adult Eastern Arctic Eskimos the incidence of antibodies to adenovirus was 35% and was as high as 80% in two communities. Approximately 15% of the sera had antibodies to psittacosis but, as this could represent infection with other viruses, the significance of this unexpected finding is not clear.

REFERENCES

1. Greenberg, L. and Blake, J. D.: Canad. M.A.J., 1958, *78*: 27.
2. Coffey, J. E. and Wiglesworth, F. W.: Canad. M.A.J., 1956, *75*: 295.
3. Fritz, M. H., Thygeson, P. and Durham, D. G. V.: Am. J. Ophth. 1951, *34*: 177.

Antibodies to Adenovirus and to Psittacosis

Location	Estimated Population	No. tested	No. with antibodies to			
			Adenovirus		Psittacosis	
			1:8 or less	1:16 to 1:128	1:8 or less	1:16 to 1:128
Arctic Bay	170	10	1	8	0	1
Grise Fiord	50	21	4	4	4	1
Navy Board and Pond Inlet	250	43	5	11	9	2
Scott Inlet	50	11	2	7	2	0
Sam Ford Fiord and Cape Christian	20	5	0	0	0	0
Clyde River	100	21	2	8	2	0
Kivitoo	40	6	1	0	1	0
Broughton Island	70	15	1	3	1	0
Padloping	30	15	1	4	0	0
Durban Island	30	9	0	0	3	0
Frobisher Bay	480	42	6	9	6	0
Lake Harbour	280	22	4	2	4	2
Wakeham Bay	100	21	1	1	1	0
Totals	1670	241	85		39	

The Prevention of Carcinoma of the Lung[1]

A Review of the Relationships between Cigarette Smoking and Cancer of the Lung, Obstructive Emphysema and Other Morbid Processes, with Comments on Possible Methods of Prevention.

JOHN O. GODDEN,[2] M.D.

A RECENT EDITORIAL (1) in the New England Medical Journal entitled "Tobacco and Health", says "like a championship chess game, the tobacco-cancer 'controversy' develops in a series of moves and countermoves made before a passive and confused public. . . . Not content with a relatively silent position like those who market distilled liquor without denying the 'evils of drink', the tobacco interests have now shown themselves assertive and aggressive. . . . They have entered medical fields, including that of oncology, with a new periodical, *Tobacco and Health*, and a 127-page booklet, *Science Looks at Smoking*, distributed gratis to stockholders of the American Tobacco Company. . . . A deadly serious decision awaits a final verdict, by the impartial methods of biology and science, and most consumers are in no position to decide the facts. They need to hear the dispassionate opinion of experts, an opinion that is allowed to express itself objectively and without immediate countermoves by those who have incentives other than that of reaching the correct decision". Knowledge of the role of tobacco-smoking in the causation of cancer of the lung and other morbid processes has advanced sufficiently to require the serious consideration of every member of the medical profession. In this paper the facts thus far established will be reviewed briefly, but particular emphasis will be laid upon the responsibility of the physician in placing these facts before the public. He can lay the ground-work for prevention of illness and death due to the tobacco habit through his own example of moderation or non-smoking.

The Effects of Tobacco Smoking

The following facts about the biological effects of tobacco will provide a basis for discussion.

1. There are at least two potentially harmful agents taken into the body during the act of smoking.
   A. *Nicotine.* This is one of the most toxic alkaloids known. In a person who inhales deeply, the amount of nicotine that reaches the blood is about 0.3 mgms. per cigarette (2). Bodnar (3) states that the lung with its large area made up of millions of alveoli absorbs 93% of the nicotine in smokers who inhale but only 6% in non-inhalers. Space permits only a brief mention of systems said to be affected by this

[1]Presented at the seventh annual meeting of the Atlantic Branch, Canadian Public Health Association, Kentville, N.S., Nov. 6, 1957.

[2]Associate Professor of Preventive Medicine, Dalhousie University, Halifax, N.S.

agent. The cardio-vascular system is the chief victim. Myocardium, junctional tissue, arteries, veins and capillaries are all acted upon by nicotine in tobacco products. The best known disease entity attributed to tobacco smoking is Buerger's disease (thrombo-angiitis obliterans). Raynaud's disease is aggravated by tobacco smoking (4).

B. The combustion products of the tobacco tars which are dispersed in the gaseous phase in tobacco smoke. They pass all barriers, natural and artificial, and penetrate much more deeply into the lungs than any other inhaled foreign matter. Roffo (5) states "tobacco tars are very strong carcinoma producers and occur in the same chemical form as coal tars—a regular smoker consumes 1 kilogram (2.2 lbs.) of tobacco smoke monthly and loads 850 cc. of tobacco tar into his bronchial tree each month". The smoker who does not inhale absorbs much less of this foreign material than the smoker who inhales.

2. Cigarette smoking is potent in initiating or aggravating chronic endobronchial or parenchymal pulmonary disease. For many reasons tobacco smoking, particularly cigarette smoking, should be considered a serious health problem even if it were proven that it had no causal relationship to the development of carcinoma of the lung.
3. Carcinoma of the lung takes a dreadful toll among adults in every country in the western world where this problem has been studied. The death rate is now approximately 1 in 18 males above the age of 45 and 1 in 103 in females above that age. Cigarette smoking is the only etiological agent incriminated to a significant degree by rigorous scientific investigation.
4. The illness and death due in considerable measure to the tobacco habit are preventable. Studies suggest that there is a considerable measure of safety in moderation. If individuals who smoke cigarettes will stay well below the danger level of 15 cigarettes a day, they can greatly minimize the risk. If they take up cigars or pipe smoking as their source of "pleasure" they will also improve their chances of avoiding carcinoma of the lung.

Those interested in further details of the biological effects of tobacco are referred to a book of the same title, edited by E. L. Wynder (6). In this book the following points are cited as of importance in the cigarette habit.

1. The greater practice of inhalation among cigarette smokers.
2. The possibility that cigarette smokers are more likely to be heavy users of tobacco than are cigar and pipe smokers.
3. Cigarette tobacco may be prepared somewhat differently from that used for cigars and pipes.
4. It may be that cigars and pipes filter certain tar particles more thoroughly than do cigarettes.
5. The different burning properties of cigarettes may produce tar unlike that obtained from cigars and pipes.

THE HAZARDS OF TOBACCO SMOKING:

The best evidence about the risk involved in cigarette smoking is based upon the following data (7). On the basis of Doll's study of pulmonary cancer

he estimated that of five deaths in males from 25 to 75 years of age in 1950, lung cancers in four were attributable to smoking and in one, to some other cause. Among heavy smokers (i.e. those smoking 25 or more cigarettes a day) over 50 years of age, the incidence of pulmonary cancer in the studies reviewed by Haenszel was 13 times that in non-smokers, in Breslow's study in California 25 times, and in Doll's study 50 times. On the basis of the death rate from pulmonary cancer of 4% in males 45 to 64 years of age reported by Breslow and a similar study by Doll in Great Britain, about 3 out of 100 men who reach age 45 will die of pulmonary carcinoma during the years 45–65 who might have escaped if they had not smoked.

In 1955, the death rate from lung cancer in Great Britain reached a level of more than double that recorded only ten years earlier—388 deaths per million of the population in 1955 compared with 188 per million in 1945. Among males the disease is now responsible for approximately 1 in 18 of all deaths. Although the death rate for females is still comparatively low, it has shown a considerable increase in recent years and the disease is now responsible for one in 103 of all female deaths.

The Medical Research Council report (8) ends with the following conclusions.

1. A very great increase has occurred during the past 25 years in the death rate from lung cancer in Great Britain and in all other countries.
2. A relatively small number of the total cases can be attributed to specific industrial hazards.
3. A proportion of cases, the exact extent of which cannot be yet defined, may be due to atmospheric pollution.
4. Evidence from many investigations in many countries indicates that a major part of the increase is associated with tobacco smoking, particularly in the form of cigarettes.
5. The identification of several carcinogenic substances in tobacco smoke provides a rational basis for such a causal relationship.

Most of the studies on the tobacco–lung cancer problem have been done by taking smoking histories in individuals known to have carcinoma of the lung and comparing the smoking habits of this group with a control group who do not have carcinoma of the lung. This method has been assailed by many who say that the second group is not an adequate control of the first. Doll and Hill (9) avoided this difficulty by gathering the information about smoking habits of all members of the British medical profession (1951) and then following the deaths occurring in these individuals from that period onward. Thus, nature herself conducted the experiment. The doctors themselves made the classification regarding their smoking habits and Doll and Hill were observers, incapable of altering the results of the experiment.

A PROSPECTIVE STUDY OF THE EFFECTS OF SMOKING

On October 31, 1951, a simple questionnaire was sent to all members of the medical profession in the United Kingdom. They were asked to give their name, address and age and were asked to classify themselves into one of three groups:

A. Whether they were at that time smokers of tobacco.
B. Whether they had smoked, but had given up.
C. Whether they had never smoked as much as one cigarette a day or its equivalent in pipe tobacco or cigars for as long as one year.

All smokers and ex-smokers were asked additional questions: the smokers were asked the age at which they had started to smoke, the amount of tobacco they were smoking, and the method of smoking at the time of replying to the questions: the ex-smokers were asked similar questions that related to the time at which they had given up smoking.

On the basis of these replies the doctors were classified in a few broad groups according to their age and sex, the amount of tobacco they smoked, their method of smoking and whether their smoking had been continuous or abandoned. The deaths occurring in all these groups have been recorded since that time. To insure a high proportion of replies, the questionnaire was intentionally made extremely short and simple. The doctors were not asked for their life history of smoking habits, although in studying the incidence of lung cancer with a long induction period, it is known that the habits of early life might be more relevant than the more recent habits. In addition, no further enquiry was made into any change of habits that may have taken place since October 1951. In short, the deaths of the doctors that have occurred since 1951 have been related to non-smoking, present smoking and ex-smoking groups as constituted at that date. An accurate comparison can be made between life-long non-smokers and all smokers past and present, but any greater mortality that will be observed in relation to the amount of smoking will be an understatement of the true relationship. In the group of light smokers will be included persons who previously smoked heavily, but at November 1, 1951, had reduced their consumption. Similarly, a heavy smoker at November 1, 1951, may previously have been a light smoker or may since then have given up smoking altogether, but he will be continued in the classification as a heavy smoker. If there is a difference of death rate with smoking, such errors tend to over-estimate the mortality among light smokers and under-estimate mortality among heavy smokers. The data presented in this paper may be understatements, but cannot be overstatements.

The preliminary report published in 1954 showed the number of deaths from lung cancer at that time as 36. In showing a steadily rising mortality from lung cancer as the amount of smoking increased, the figures were in close conformity with figures previously established in extensive retrospective enquiries into smoking history of patients with cancer of the lung and other diseases. Two years have passed since this report and an increased body of data has been analysed with regard to four questions:

1. What are the relative risks of lung cancer as associated with the smoking of different amounts of tobacco by different methods?
2. Is there a reduction in the risk if smoking is given up?
3. What is the most likely explanation of the observed association?
4. Is there a relationship between smoking and any other cause of death?

The questionnaire was sent out to 59,600 men and women on the Medical Register, 40,701 of these questionnaires were sufficiently complete to be

utilized; 34,494 of these were received from men and 6,207 from women. The doctors concerned were followed from October 31, 1951 until March 31, 1956, that is, for four years and five months. The principal analyses in this paper (10) are confined to the mortality experiences of men age 35 and above, involving 1,714 deaths from all causes. Of the total number of deaths among men age 35 or more, 82 were certified as due to lung cancer, while in the three others lung cancer was mentioned as having contributed to the death without being the primary cause. No deaths from lung cancer were reported in men under the age of 35 years and only three such deaths at all ages were reported among women. In 79 of the deaths due to carcinoma of the lung, the site of the primary growth was confirmed at necropsy, either by operation, bronchoscopy or radiological examination. Clearly the diagnosis may have been incorrect in some of the cases but the evidence suggests that it was not likely to be wrong in any more than a small proportion. If all causes of death are considered the mortality is highest among heavy smokers (men who smoke 25 gms. or more tobacco a day) and the rates for light smokers and moderate smokers are still 10% to 13% above the rates for non-smokers. Of the five groups of diseases separately considered, lung cancer is the only one to show a marked and steady increase with the amount smoked. Other respiratory diseases and coronary thrombosis also show some increase with rise in tobacco consumption, particularly the former.

Other Effects of Cigarette Smoking

Recent studies by Lowell, Phillips, Greene and others (11) on the relationship between tobacco smoking and chronic bronchitis and obstructive emphysema have given rise to the hypothesis that, in many individuals, chronic pulmonary emphysema is the result of specific occlusive bronchiolitis due to long-term reaction to inhaled tar and smoke. Lowell and his colleagues do not claim that smoking is the only cause of emphysema, but that it is a potent and prolific one. Although they believe that the association between smoking and carcinoma of the lung "is established", they point out that emphysema is more common than cancer and when fully developed, "has a prognosis almost as gloomy". There can be no reasonable doubt that cigarette smoking is a frequent and potent cause of bronchial irritation which, if the habit is continued, often leads to chronic bronchitis and in some cases, eventually to obstructive emphysema and fatal pulmonary insufficiency. There is no doubt that other sources of irritation, such as irritating dusts associated with industrial activities—the smog of cities like London and Los Angeles, in many cases over-shadow smoking in importance. One might expect that the combined action of two such irritants could be exceptionally injurious. Phillips' observations, however, suggest that the relative importance of industrial air pollution in this regard is often exaggerated. In fact, inhaling hot tobacco smoke into the chest means bringing in polluted air in higher concentration than would be encountered under almost any other natural conditions.

Space does not allow any consideration of the significance of the effects of tobacco smoking in the production of cardiovascular disease, of relapses in pulmonary tuberculosis, oral malignancy, occlusive arterial disease, premature

delivery, and peptic ulcer. Mibashan (12) in a review published in 1952 gives an extensive documentation of the effects of tobacco on the various systems of the body.

The Matter of "Proof".

It is freely admitted that the association between cigarette smoking and cancer of the lung cannot be proven in an absolute sense. Garland, writing in an editorial in the New England Journal, refers to the data supporting a causal relationship between cigarette smoking and carcinoma of the lung as "evidence so strong as to be considered proof within the everyday meaning of the word". However, in the defence of the public health, we in the medical and allied professions are bound to base action on the best evidence currently available. The limitations of observational data have long been well-known to epidemiologists and other physicians. To cite a classical example–should John Snow (1813–1858) have waited for the discovery of the cholera bacillus before persuading Londoners not to drink their own sewage? It is a matter of medical history that Snow saved thousands of lives as a result of efforts based upon a predicted causal relationship arising from his observations, thirty years before the organism was discovered.

Education and Prevention

If we assume that a causal relationship has been established between heavy cigarette smoking and various types of organic disease process, particularly carcinoma of the lung, what can be done to reduce the incidence of illness and death due to this cause? It would be unrealistic to suppose that cigarette smoking can, or should be forbidden. The aim is rather to influence the heavy smoker to modify his habit. This modification may take two forms–

First–Replacement of the cigarette by the less dangerous pipe or cigar.

Second–Reduction in the amount of tobacco used.

The evidence suggests that the temperate cigarette smoker, who confines himself to say one after each meal and two or three in the evening, runs an appreciably lower risk.

Now to turn to the adolescent who does not yet smoke or is at present, experimenting with the habit, what should we say to this individual? A middle-aged cigarette smoker with a chronic cough may be moved by fear of cancer or of continuously increasing pulmonary disability, to reduce his smoking or give it up; but can we expect a young person to be deterred by a risk that is apparently so remote to him. Among adolescents, smoking seems to be increasingly common. *Young people are unlikely to be influenced as much by lectures, pamphlets and the advice of adults as by the fashion among those to whom they look for an example.* Smoking is very much a matter of fashion and if the large loss of life due to cigarette smoking is to be reduced, the fashion, especially among young people must be changed.

Practical Aspects of Prevention.

In his article–"Towards a Solution of the Tobacco Cancer Problem", Ernest Wynder (13) suggests the following practical methods of prevention.

1. Moderation of smoking habits.
2. Effective filtration. Wynder believes that an adequate filter can be made, but at present the tobacco industry is not making such a filter.
3. Removal of precursors. Treatment of the tobacco leaf to remove the aliphatic hydrocarbons present in the waxes that cover the tobacco leaf.
4. Modification of pyrolysis. Modification of the burning of the tobacco during the smoking may well reduce the formation of carcinogens.

Education

Our preliminary aims in education are as follows:

1. The dissemination of accurate information about this problem to all persons in our population, particularly children and adolescents who do not yet smoke.
2. Encouraging men and women who now smoke to stay below the danger level of fifteen cigarettes a day or, in males, to substitute pipe or cigars for cigarettes.
3. Encourage the industry to develop and use adequate filters which will remove carcinogenic materials in the gaseous phase from cigarette smoke. It is authoritatively stated that no such filters are now in use.

If a teacher, health worker, physician or other individual wishes to play a part in prevention of lung diseases through modification of tobacco smoking, he can consider the following points:

1. For those of us who smoke, let us smoke as we drink, that is, in moderation and in the forthright declaration to all youngsters that we recognize our habit has definite dangers. This attitude on the part of smokers would do much to put this problem on a realistic basis because the tobacco manufacturers apparently still cling to the illusion that this habit is harmless, despite evidence to the contrary. "They naively advertise filters to remove substances the danger of which they are unwilling to admit". (14)
2. All adults, dealing with their own children or with others, should discuss this problem long before it arises as a tentative adolescent habit. This is important because the so-called "psychological addiction" to tobacco begins at a very early age, probably as early as two or three years, when the child sees the adults he admires smoking cigarettes. During the rest of his development he is bombarded on all sides, in magazines, on radio and on the television screen by the sight of athletes, movie stars and alas, even physicians, proclaiming their adherence to and advocacy of this habit. The tobacco advertisements are remarkable for what they do not say. They reiterate 'this is good', 'it is satisfying', 'it is pleasurable'. These vague claims by the tobacco industry suggest that cigarette smoking is only a harmless pleasurable activity. It should be strongly countered by all interested adults who can say that this habit has serious dangers. The only people who actively and consciously promote it do so for profit.
3. This problem should never be approached on a moral basis. No adult should say that tobacco smoking is morally wrong or offends against the tenets of religion. We do nothing but undermine whatever persuasive

effect we might have on the adolescent mind by approaching the problem in this way. It is much better to set the facts forward early, repeatedly and with firm emphasis on one's personal example (if it is commendable) than to preach.

A study of the characteristics of non-smokers is much needed. The individuals who deny the relationship between smoking and carcinoma of the lung continue to refer vaguely to some specific difference in personality or metabolism that underlies both the need to smoke tobacco and development of carcinoma of the lung. None of the evidence currently available supports such a hypothesis. However, it would be very helpful to know what factors contribute to the emergence of the non-smoker in a population that is so widely addicted to this habit. Those interested in the problem feel that a generation at least will be lost to pulmonary disease of various kinds before any significant change in smoking habits takes place.

Summary

1. Responsible medical scientists in many nations have after careful study agreed that smoking, particularly cigarette smoking, is an important cause of cancer. Special study groups appointed by the profession and by government have reviewed the evidence leading to this decision and confirmed this conclusion. The individual physician must accept new responsibility because of this momentous advance in medical knowledge.

2. Most adults who are heavy smokers will not stop smoking. Moderation in smoking or substitution of cigars or pipe for cigarettes is recommended.

3. All adults are urged to consider the significance of their example in this matter, especially to adolescents who are not yet habituated. The chief hope, in reducing the incidence of carcinoma of the lung and other disease related to the tobacco habit, is in the increase in the percentage of non-smokers among the adolescents and young adults in our population.

ACKNOWLEDGEMENT

The author wishes to express his sincere thanks to the editorial writers of *The Lancet* whose views have, over the years, stimulated and informed him.

REFERENCES

1. Editorial "Tobacco and Health".: N. England J. M., 1958, 258 (2): 99.
2. Burn, J. H.: Proc. R. Soc. M., Lond., 1957, *50*: 500.
3. Bodnar quoted by Hiestand *et al*: J. Laborat. Clin. M., 1940, *25*: 1013.
4. Landis, E. M., quoted in Cecil's Medicine, Philadelphia, 1947, p. 1298.
5. Schwartz, H. F.: New York State J. Med., 1945, *45*: 1539.
6. Wynder, E. L. "The Biological Effects of Tobacco." Little, Brown & Co. Boston. 1955.
7. Editorial "The Relation of Cigarette Smoking to Bronchogenic Carcinoma.": Ann. Int. M., 1957, *46*: 187.
8. Tobacco Smoking and Cancer of the Lung. Medical Research Council.: Brit. M. J., 1957, No. 5034, 1518.
9. Doll, R. and Hill, A. B.: Brit. M. J., 1954, *1*: 1450.
10. Doll, R. and Hill, A. B.: Brit. M. J., 1956, No. 5001, 1071.
11. Editorial "The Irritative Effect of Smoking on the Respiratory Mucous Membranes.": Ann. Int. M., 1956, *45*: 1235.
12. Mibishan, J.: Practitioner, 1952, *168*: 282.
13. Wynder, E. L.: Brit. M. J., 1957, No. 5009, 1.
14. Garland, J.: Foreword to "The Biological Effects of Tobacco." Little, Brown & Co. Boston, 1955.

Integration of Social Welfare in Tuberculosis Control Programs[1]

WILLIAM G. DIXON,[2] B.A., A.M.

IT has been demonstrated that while tuberculosis death rates markedly decreased between 1947 and 1954, the total tuberculosis first admission rates declined only slightly. First admission rates are increasing for children up to the age of 9 and for people above 50 years of age. One happy note is a particularly marked decrease in the death rate for women between 20 and 29 years. As well, there is ample demonstration of greater tuberculosis mortality in males than in females among those over 40 years of age.

As I moved from a review of these trends to the subject of social welfare in tuberculosis control, it seemed to me that the discussion resolved itself into three major parts: first, the need for increased recognition of the role of emotions in disease, including tuberculosis, and what is more important, doing something about it; second, the question of income security in Canada for tuberculosis patients and their families when they are under treatment; and third, the role of voluntary health organizations in a world where public medical care may soon be as common as public education.

To talk about the role of emotions in disease may seem repetitive, but some of us in Vancouver recently had the message brought home to us again by a published report on the psychological aspects of tuberculosis in our neighbour city of Seattle.

Reporting on a seven-year study of 1,500 TB patients, Seattle psychiatrist Thomas H. Holmes (2) gave the American College of Chest Physicians in Manhattan new evidence that TB is triggered by emotional causes. Paralleling a similar British study (3), the findings showed that more than 50% of the TB victims came from homes broken by death, divorce, or separation before the patients were 18; the divorce rate among tuberculars was four times the U.S. average. Most TB patients had cut short their education, had a penchant for moving from city to city and changing jobs often—long before they knew that they had the disease. The TB patients also had more than their share of emotional illness: 20–25% had psychoses, and 36% had neuroses.

The TB group included large numbers of first- and second-generation citizens and the rates were higher for non-whites than for whites. Bad living conditions and overcrowding were not a satisfactory answer; e.g., among non-white males who moved into the best residential areas the rates soared far above the slum rates. Dr. Holmes and his colleagues concluded: the TB patients were not at home in their environment, and their attempts at adjustment led to "unrealistic striving, cumulative conflict, anxiety and depression". The stresses to which the patients succumbed were far from unusual; breakup of a marriage, loss of job, a spell of drunkenness. In normal comparison groups, such difficulties were spaced over the years while among TB victims the experiences were piled up in the two years preceding onset of the disease. It was when their "limited capacities were no longer adequate for resolving problems or achieving satisfaction that tuberculosis developed".

---

[1]Presented before the fifty-seventh annual meeting, Canadian Tuberculosis Association, Vancouver, June 25, 1957.

[2]Director, School of Social Work, University of British Columbia, Vancouver, B.C.

These findings have two major lessons—one is the continuing need for the community to step up its mental health services and the other, in which the program of tuberculosis treatment is directly involved, the provision of social welfare and psychiatric services to deal with the stresses and anxieties which impede treatment. The community must make a greater effort than ever before to deal with its problems. We often know what is wrong with people but do not do anything about it. Anyone familiar with the public and private health and welfare agencies of this country knows that virtually all of them cannot cope with the problems that come to their door because of the difficulties of inefficient financial resources or the problems of recruiting sufficient talent to do the job. This is an age where there is open-mouthed admiration of the intricacies of machinery. In the face of the kind of world we live in and the disturbing things that are happening around us must come the awareness that the human mind is the trickiest piece of machinery of all, and it takes both talent and time to get it into proper working order. "We have just begun to fight" should be the slogan of every community dealing with problems of unhappiness and disturbance.

These are the problems of the community, but for the hospital administrator or clinic director the immediate community consists of the patients in his care. I am sure that you are familiar with the emotional issues which often impede recovery—the impact of the discovery of a disabling disease, the resentment about loss of income when everybody else seems so prosperous, the blaze of hostility against anyone in authority, the resentment of the wife or husband at home who feels that all family responsibilities have been thrust on her or him, and the patient who almost fears recovery because of the responsibilities it will bring. I do not need to elaborate further because we all remember Osler's dictum that tuberculosis is a social disease with medical manifestations.

It is because of increasing awareness of these kinds of problems that the new profession of social work has advanced in recent years. If you will allow me, I would like to say a word about the kind of training that we endeavour to give our students. First of all, social work education has a practical ring about it because throughout the year it combines both academic study and field work. Another feature of current training is that it endeavours to avoid over-specialization. The objective is to produce well-rounded and knowledgeable social workers who will be able to function in almost any social work, although naturally they will have their own individual preferences. The social workers have long been a part of medical treatment in British Columbia and we are proud of what they have accomplished and the status they enjoy.

I think it is impossible to discuss the integration of TB control and social welfare without some reference to the kind of support that we provide for tuberculosis patients when they must withdraw from work. I think the first thing to acknowledge is that we in Canada in recent years have gone through a rather silent revolution in providing income security. Canadians do not oppose the role of the state in providing security for the individual, nor are they all-out for security. We simply decide that at the proper time something should be done about a particular problem, and it is usually done without great fanfare, although I think the recent discussion of the adequacy of old age security is probably an exception to this rule.

Public Assistance Programs

At the 1957 meetings of the Canadian Welfare Council, Mr. Richard Davis, Executive Director of the Council, stated that the next big push in social security should be towards adequacy of public assistance. Public assistance is distinct from social insurance or social endowment in that it involves a means test and usually sets upper limits of income. In spite of recent advances, Canadians have never really explored their conscience about how much support should be provided for the poor, and this is particularly so at a time when rising prices and rising standards of living mean that the poor may be in a far worse relative position in a period of prosperity than they were in times of depression.

An event which went virtually unnoticed by the Canadian people was the recent introduction of unemployment assistance agreements between the federal government and six of the Canadian provinces. Broadly speaking, these agreements provide that the federal government will share half the cost of public assistance when the caseload exceeds .45% of the population. British Columbia is one of the provinces that comes within that category and signed an agreement from which it expects to receive approximately $2,400,000 from the federal government for the fiscal year 1957–58.

The point about these agreements is that they are revolutionary in their approach to Canadian grants-in-aid for public assistance. By this I mean that they allow the provinces great scope in moving towards adequacy of public assistance. For one thing, unlike Old Age Assistance, Disability Assistance and Blind Persons' Allowances, they do not set any maximum of allowances to which the federal government will contribute. Thus, if a province wished to provide $100 a month to a sick person who is in receipt of social assistance, then the federal government would share half the average cost for those cases that are above the .45% level. The other major point is that the federal government has defined no means test formula, which means that a participating province can be quite liberal in assessment of resources and outside income, something which is of real meaning to the sick person who should not be reduced to ultimate poverty before the state will provide him with assistance.

What meaning does this hold for the person interested in public assistance as an aid to the recovery of health? For those provinces that are now in the agreements, it means that they have the opportunity of being more liberal both in amount of assistance and eligibility qualifications because they are now getting a sharing of costs above the .45% level and they know that if they reach out for greater adequacy that their efforts could mean a continued sharing. Nobody would advocate a "give-away" program for provinces whose assistance caseload does not reach .45% of the population, but they at least should examine their program and their conscience to see that they are doing the right thing both in terms of eligibility and money for those who cannot work for one reason or another. There is a further point for community-minded people to ponder and it is whether there should only be federal sharing above the .45% level. At least one provincial premier has suggested that the federal government should share 50-50 in the kinds of cases coming under the unemployment assistance agreements.

The Role of Voluntary Agencies

Another topic that I would like to discuss is the question of the role of voluntary agencies, including health agencies, in the face of increasing public interest in health and welfare services. I would suggest that the increasing role of government is by no means a signal of the end of the voluntary idea, but that it does mean that the role of voluntary effort is a different one in the modern world. The voluntary idea had its beginning in the dreadful social conditions which people had to face and the fact that most governments were unwilling to do anything about them. Groups of citizens banded together with the idea that with their own hands they would do something about alleviating particular kinds of distress. Many of them also worked for government to recognize its responsibilities and when it did they would push on to new kinds of social pioneering.

My field of interest has been more on the social welfare side than in health matters, but I feel that there is a need to continue pioneering in both areas. In addition to providing different kinds of services than in the past, health and welfare agencies are going to have a new kind of role in providing a social audit for the community. By this I mean that in the modern world we are seeing the introduction of vast programs designed for human betterment, but we do not really know how good they are. Moreover, the ordinary man has so many ideas coming at him that he cannot begin by his own efforts to make an analysis of the virtues of all proposals. What he needs most of all is for responsible groups and persons to analyze proposals for him so that he has some appropriate guide to make decisions involving the public good.

My final point relates to the integration of all services in the community which are designed to help people in trouble. A good deal of thought has been stimulated in the United States by a recent book by Bradley Buell. The outstanding fact of the study, which was centered in St. Paul, is that 6% of the population absorbs more than 50% of community health, welfare and recreation services.

The real message of the book is that every community has a "hard core" of problem families which over the years have absorbed some kind of service from virtually every agency in town. But the community has been so busy in recent years in setting up new kinds of services and strengthening older ones that it has not yet reached the point of combining them together for an all-out approach to a particular situation. To be specific, the day will soon come when instead of various agencies dealing with different kinds of problems at different times, there will be a combined operations approach at one time, and over a period of time, so that a total rehabilitation process can be achieved.

The battle against the major social evils has been won and we now have a great variety of services to occupy the conquered territory. Let us now weld them together for the common good and reach out for new heights of human betterment.

REFERENCES

1. Wicks, C. A.: Canad. J. Pub. Health, 1957, *48*: 146.
2. Time Magazine, 1957, June 10, p. 42.
3. Time Magazine, 1957, Feb. 11, p. 54.

Health Services for Public Assistance Recipients in Canada[1]

LILLIAN BOES,[2] M.S.W.

FEW people in Canada today are aware that approximately $50,000,000 or about 6% of the estimated total national expenditure for the purchase of all types of personal health care in Canada in 1955 was expended by provincial and municipal governments on health services for persons in receipt of some form of public assistance or who were medically indigent. Large as this total may seem, it does not take into account the costs of medical services provided by private charity, or of those special programs under varied auspices for persons some of whom would be medically indigent suffering from illnesses such as cancer, cerebral palsy, mental disease and tuberculosis. Nor does it allow for the cost of federal programs for certain veterans, and Indians and Eskimos, many of whom would otherwise be classified as medical indigents. Thus, what began as a relatively simple provision for the treatment of the sick poor, largely on a charitable basis, and at local discretion, has developed over the past three decades into an enterprise of some financial magnitude.

This historical growth and the present organization of special health care schemes for the aged, dependent mothers, the blind and disabled and other dependent persons in each province, has now been documented by the Department of National Health and Welfare in a bulletin entitled, "Health Services for Public Assistance Recipients in Canada". For students of public health administration as well as for those with a broad interest in matters of social policy, the bulletin provides a background for the examination of some general questions relating to the provision of health care as well as a fund of detailed data concerning the patterns of service and costs involved in the provision of health care to those persons now receiving financial aid in some form from public authorities.

The shift in the pattern of administration from a local to a provincial responsibility has taken a form, in relationship to hospital care, that is different from the provision of medical, dental and other health services. Hospital care was the first service to be provided to the poor and the indigent, and as charitable institutions providing both domiciliary care and treatment, hospitals have enjoyed local support, both public and voluntary. A system of provincial statutory grants to hospitals was a natural development but the problems of the depression required entirely new programs for medical, dental and other health care.

---

[1]Abstract of Health Care Series, No. 1, Research and Statistics Division, Department of National Health and Welfare, September 1957, 189 pages.

[2]Research and Statistics Division, Department of National Health and Welfare, Ottawa, Ontario.

The programs in the three most western provinces and Newfoundland present a unified approach to the problem of hospital and other treatment services. However, Newfoundland should be distinguished in that its Cottage Hospital Plan supplies both medical and hospital care in outlying areas to the general population on a premium basis with services given at provincial expense to all those who are financially unable to pay for care. Two provinces, Ontario and Nova Scotia, have special medical service programs for certain groups of public assistance recipients while hospital care is provided under the provincial hospital acts on a local discretionary basis. In the remaining provinces and the two territories, all services are provided on the traditional local basis with no discrimination between categorical and medical indigents. Of the provinces which now have public hospital insurance, namely British Columbia, Alberta, Saskatchewan and Newfoundland, it is of interest to note that only in Alberta has a special hospital plan been set up for public assistance recipients who also receive other general health service care under a special program with costs fully assumed by the provincial government.

As discussed in the bulletin, the most interesting comparisons in the provision of medical, dental and other health services lie in the five chapters describing the special programs offered by British Columbia, Alberta, Saskatchewan, Ontario and Nova Scotia for certain groups receiving public assistance. Examination of the types of public assistance recipients covered, of the services made available, as well as of the patterns of utilization of service and of administration, show striking variations.

It can be seen from the following tabulation that whereas all schemes cover mother's allowances cases and the blind, other categories are not uniformly included. This tabulation reflects among other things the different policies concerning the extent of local responsibility retained by municipalities, and

Category	British Columbia 1955–56	Alberta 1955	Saskatchewan 1955–56	Ontario 1955–56	Nova Scotia 1956
Old Age Security (Supplemental Allowances) Blindness Allowance	36,732	28,299(a)	19,435	81,464	—
		623	523	1,612	900
Old Age Assistance	8,446	(a)	—	21,122	8,100
Mother's Allowance	1,225	5,954	9,406(b)	24,140	—
Social Allowance or Unemployment Relief	18,048	—	2,016	23,980	—
Disabled Person's Allowance	453	—	—	7,188	—
Child Wards	3,305	—	1,630	—	—
Widow's Allowance	(c)	747	(c)	(c)	(c)
Other	—	—	644(d)	—	—
Total	68,209	35,623	33,654	159,506	9,000
As Per Cent of Provincial Population	5.1	3.3	3.8	3.0	1.3

(a) Includes Old Age Assistance.
(b) Includes some child wards whose guardians receive mother's allowance.
(c) Not supplied in these provinces.
(d) Includes various categories of persons who are a provincial responsibility, e.g. jail inmates.

a trend by some provinces towards providing uniform benefits to a broad range of categories.

In the three western provinces, so-called comprehensive benefits: physicians' calls in home, office and hospital, confinements, diagnostic services, surgery, optical and dental care and certain other services such as physiotherapy and chiropody are supplied. Drugs are included in British Columbia and Saskatchewan while in Alberta these are dispensed to hospital in-patients and out-patients only. Ontario and Nova Scotia provide limited service programs, including home and office calls, home confinements, refractions, and certain diagnostic services. Emergency dental and drug services are also obtainable in Ontario and, in Nova Scotia, medical and surgical care in hospital to certain specified limits. It seems clear in reviewing this varied pattern of service that the benefits supplied are more a recognition of the provinces' traditional patterns of health and welfare development and varying capacities to meet the necessary financial expenditures than they are a recognition of the basic health needs of the persons involved.

Even where programs are similar, the demands for service are varied. The rates of physician's calls per thousand eligible beneficiaries are shown below:

	British Columbia		Alberta		Saskatchewan	
Physician's Calls	Total	As % of Total	Total	As % of Total	Total	As % of Total
Home	870	19.9	700	9.3	895	10.7
Office	2,206	50.4	1,804	23.9	2,357	28.2
Hospital	1,305	29.7	5,049	66.8	5,120	61.1
All Calls	4,381	100.0	7,533	100.0	8,372	100.0

For example, under the British Columbia program, the rate of home and office calls represented proportions of the total physician call rate which are approximately double the proportions of these call rates to the total in Alberta and Saskatchewan. With hospital calls, the situation is reversed. Such differences are not easily explainable. Certainly it can be said that the patients receiving such care have roughly the same age, sex and income status in each of these three provinces. Perhaps the answer to the problem is to be found in a complex of factors, including the rural-urban distribution of population in relation to the supply of physicians, the availability of alternative treatment facilities such as out-patient departments and various types of chronic hospitals and nursing homes, as well as the traditional local patterns of care. In Ontario, without medical service in hospital provided under the Medical Welfare Plan, the utilization of home and office calls per 1,000 are roughly comparable, while in Nova Scotia the pattern of care reflects the needs of a group predominantly composed of mothers and children:

Physicians Calls	Ontario (rate per 1,000)	Nova Scotia (rate per 1,000)
Home	2,351	760
Office	2,468	1,160
All	4,821	1,921

The extent of coverage and benefit provision in the different programs affects, of course, the financial operations of these provincial schemes. Each of the five provinces uses the pooled fund method of paying for medical services based on an agreement with the provincial College of Physicians and Surgeons. In Alberta, the same method is extended to dental care. All other services are supported mainly by provincial or provincial and municipal revenues.

The medical funds are sustained by annual per capita payments based on the number of persons actually in receipt of public assistance. These payments are not, in most cases, intended to meet the complete charges made for medical services, but do provide pro-rated or discounted payments to participating physicians. In each case an attempt is made to remunerate physicians at not less than one-half of the normal fee charge.

As will be noted below, percentages of fees paid to physicians vary considerably:

Province	Per Capita Fund Payment	Percentage Payment of Physicians' Accounts
	$	%
British Columbia	22.50	56
Alberta	16.50	53
Saskatchewan Program I.	16.50	55
Ontario	12.60	71
Nova Scotia	9.96	100

In considering the relatively low percentage in the west, however, the total volume of claims paid, as well as the differences in provincial fee schedules are relevant factors. Such differences are reflected in the per capita funds made available for payment.

Just as the historical extension from local to provincial responsibility and the coverage and scope of benefits under the programs have shown a somewhat different pattern from province to province, so the administrative framework developed to operate the programs has shown distinct provincial variations. This is best illustrated in regard to medical services where several administrative forms are represented. Saskatchewan has the type of program where the entire administrative operation is under a department of government. In the other four provinces, a government agency establishes the eligibility of beneficiaries for service, but a separate agency administers the Medical Fund. In Ontario and British Columbia, this body is an agency sponsored by the provincial medical associations; in Nova Scotia, a doctor-sponsored non-profit voluntary insurance plan, whose main activity relates to prepaid health care for the general population performs these duties; in Alberta, in lieu of a separate agency, the College of Physicians and Surgeons of Alberta administers the Fund.

An examination of the whole organization of health schemes for public assistance recipients again emphasizes the unique character of many Canadian developments in the health field where historical precedent and changes in social concepts have resulted in a wide variety of approaches to the development of such programs.

Impregnated Cords in the Control of House Flies

DONALD M. BLACK,[1] M.D., D.P.H.
STEVE MAZUR, B.Sc., C.S.I.(C)

THE basic approach to control of the house fly (*Musca domestica*) is good sanitation coupled with serious attempts to eliminate breeding places and to limit food supplies. In spite of the best efforts, there are situations in which a considerable fly population will build up and in which measures to kill off the adult flies are required. DDT and other halogenated hydrocarbons were very effective against flies when they were first introduced but unfortunately, populations of resistant flies developed and these agents are now generally ineffective. Most flies are still susceptible to insecticides belonging to the group of organic phosphates but these agents are, except for malathion, generally too toxic to permit of their use as residual sprays around buildings housing livestock or human beings. Malathion has a residual effect of only 4 to 6 weeks. In February, 1956, Kilpatrick and Schoof (1) published a report on the control of flies through use of cords impregnated with various organic phosphates. The Division of Environmental Management, Health Branch, Department of Health and Welfare, Province of British Columbia, suggested that a trial of this new method be carried out at Tranquille Sanatorium. Further valuable information was found in a paper by Fay and Lindquist (2) and we were able to secure much practical advice from the staff of the Dominion Entomological Laboratory, Kamloops.

The problem

Tranquille Sanatorium is a tuberculosis hospital of 325 beds located eleven miles west of Kamloops, B.C. Attached to the Sanatorium is a farm which includes a large dairy herd, a feed lot for beef cattle and a large piggery. The farm buildings are located to the north and east of the administration and hospital buildings. Though the dairy barns are kept in excellent condition and seldom present much of a fly problem the piggery is usually heavily infested during the fly season. The flies apparently travel from this piggery, located a quarter of a mile north, to enter the main buildings where they have caused a very considerable problem in past years. The piggery has an area of approximately 10,000 square feet and is unscreened. Because all the farm land is under cultivation during the summer it has been necessary to pile manure from the piggery at a site about 100 yards away until it can be spread on the fields in the late fall. This manure pile usually teemed with fly larvae. Apparently the flies laid their eggs in the manure in the piggery and the larvae hatched in the manure which had been carried to the pile.

[1]South Central Health Unit, Kamloops, B.C.

From there the adults travelled back to the piggery or to the other more distant buildings. In 1951 flies captured in the piggery were reported by the Dominion Entomological Laboratory to have a resistance to DDT 1800 times greater than non-resistant flies. Attempts had been made to control the flies in the piggery by spraying with 25% lindane twice a week and by occasional fogging with a pyrethrin compound. Though some temporary reduction in the fly population was effected, control was not obtained.

Tranquille is several miles from any other farm or place where flies might breed in large numbers so that attempts at local control are not complicated by flies coming in from other sources.

Method

Kilpatrick and Schoof recommended the use of cotton cord soaked in 10% parathion-xylene solution for 5 minutes or in 25% diazinon-xylene solution for 2 minutes and then dried. The dry impregnated cords are hung as pendants or in loops from the ceiling of the treated areas at the rate of 30 lineal feet per 100 square feet of area. To secure this dosage the cords are stretched across the ceiling at intervals of about 4 feet.

The lethal effect of the chemicals in the dried cords is said to act through a fumigation effect rather than through direct contact. This fumigation effect, though very lethal to a fly resting on the cord, is much too weak to constitute any hazard to animals or humans in the building when the cords are hung out of reach. No attractants are added to the cords as the flies seek them out as a convenient resting place.

This method was followed in our trials. White cotton cord (No. 2 tex-made butcher twine) 3/16 inch in diameter was loosely wound on sticks and dipped in pails of the solutions. Personnel engaged in dipping the cords wore rubber gloves and protective clothing. Respirators were worn or the dipping was done in the open air to avoid inhalation of the toxic chemicals. The cord was then dried for at least two days. It was hung with the aid of a stapling gun and personnel hanging the cord wore gloves but no protective clothing. Because of the lowness of the ceilings most of the cord was hung in loops though pendant cords were used in a few places. All the cord was kept seven feet from the floor so that it would be out of reach.

1956 trials

There was considerable delay in 1956 in securing sufficient amounts of the chemicals to permit adequate treatment of the large areas involved. Small areas in the calf barn, slaughterhouse, etc. were treated on July 18 with cords dipped in parathion 10%, malathion 25% and chlordane 50%. Parathion gave excellent control. Malathion gave good control for about three weeks but then lost its effect. Chlordane appeared to be ineffective, as would be expected in view of the known high resistance of the flies to halogenated hydrocarbons. No further work was done with malathion or chlordane.

By September 7 1956, more adequate supplies had been obtained and on this date the north wing of the piggery was treated with diazinon 25% and the south wing with parathion 10%. The feed mixing room between the two wings was treated with parathion 10% on September 14.

There was a very heavy infestation of flies in the piggery at the time the cords were hung. On September 12, five days after the cords had been hung, between 800 and 1,000 dead flies per square yard were counted on the floor of the north wing of the piggery though the floor had been washed down 16 hours before. Virtual elimination of flies was secured within 10 days. The cords dipped in parathion appeared to exert a slight repellant effect for the first few days but this did not appear to be of much importance.

The trials were terminated by a sharp frost on November 17. Control had been effective up to this time, a period of from 10 to 17 weeks.

The manure pile was kept under observation. As the trials proceeded there was a remarkable reduction in the number of fly larvae to be seen though no local treatment had been carried out.

The number of flies entering the sanatorium building was much reduced as compared with previous years. This reduction was especially noticeable during the latter weeks of the trials. In previous years the flies had invaded the buildings in great numbers in the fall with the onset of cooler nights. However, it could not be said that the fly nuisance was entirely overcome. Cords dipped in diazinon were hung in reduced dosage over doors and windows and around the light fixtures in the kitchen, butcher shop and bakery of the sanatorium. A restaurant kitchen in Kamloops which was unscreened and badly infested with flies was also treated. In all cases the rooms were freed from flies within 24 hours and any flies which entered subsequently were quickly knocked down.

1957 trials

Though the results obtained in 1956 had been extremely promising, it was felt that a final report should not be made until experience had been secured over an entire fly season.

Between May 31 and June 14 1957, cords were hung in all buildings housing livestock and in other areas where flies were known to be troublesome. These areas included both wings of the piggery, the piggery feed room, the dairy barn, quarantine barn, maternity barn, horse barn and the slaughterhouse. The total area treated was approximately 20,000 square feet. As in the preceding year about half the area was treated with cords dipped in parathion 10% and about half with cords dipped in diazinon 25%. Control was equally satisfactory in each area and further differentiation between the areas treated with the two chemicals is therefore not recorded in this report. Care was taken to see that a full dosage of 30 lineal feet of cord per 100 square feet was applied in all cases. The piggery was watched very closely as it was the area which had shown much the highest degree of infestation in previous years.

When cords were hung in June there were a few flies present but these were not in sufficient number to cause any nuisance. These flies were rapidly controlled and from then until the trials were terminated on November 20 there was never more than an odd fly in any of the barns or the piggery. An interesting observation was made in the piggery on June 6, four days after the cords had been hung. At this time the interior of the piggery was virtually clear of flies but considerable numbers of dead flies were noted along the base

of the outside sunny southwest wall. Apparently some flies were poisoned by resting on the cords but had enough strength to travel to the warm outside wall before they died.

The manure pile, 100 yards from the piggery, was kept under observation throughout the summer and showed only a very few larvae in marked contrast to previous years.

Observations were concluded on November 20 when cool weather terminated the hatching of flies. Control had been effective over a period of 23 weeks. Actually the duration of the effect is probably considerably longer than this. A few cords dipped in each of the insecticides which had been hung in the summer of 1956 were left in place over the winter and these cords were still killing flies at the end of May 1957 before they were replaced with freshly dipped cords.

It must be admitted that 1957 was not a particularly bad fly season as the summer was unusually cool. Several other premises in the district were kept under observation throughout the summer and flies were quite prevalent though not as bad as in an average year. Because of the very excellent control secured we feel that our conclusions are valid in spite of the relatively light fly season.

The sanatorium buildings were virtually free from flies throughout the entire fly season though no insecticides were used in or near them. In previous years considerable expense and labor had been put into local efforts such as pyrethrin fogging, lindane vaporizers, the hanging of sticky fly paper and the distribution of swatters to the patients. In addition it had been necessary to wash down the ceilings of the kitchen and butcher shop at least twice yearly because of soiling from fly specks. In 1957 flies were so few they caused no concern.

Comparison of parathion and diazinon

Our trials would tend to show that cords impregnated with either parathion or diazinon are capable of giving efficient fly control over an entire season under conditions existing in British Columbia when they are applied at the recommended rate of 30 lineal feet per 100 square feet of area. Since both are effective the choice between these two chemicals must be made on other factors.

Parathion is prepared by the American Cyanamid Company. It is a very toxic compound having an oral LD_{50} of 13 mg. for male white rats and 3.6 mg. for female rats (3). It was used for some years with excellent results as an orchard spray but, because of risks associated with its high toxicity, has now been almost entirely superseded in orchard work by other less toxic chemicals such as malathion. Its use in the form of dry impregnated cords for fly control would appear to be entirely free from risk provided that adequate precautions are taken during the dipping of the cords. Some investigators (4) have reported that parathion cords are effective over a longer period than cords dipped in diazinon but our trials tend to show that both retain their potency long enough to make a single application of either chemical adequate to control flies over an entire season in the interior of British Columbia. Parathion was not available in 10% solution in xylene so we used technical parathion which

we diluted to the required strength with xylene. The estimated cost was $11.00 per gallon.

Diazinon is a more recently developed chemical prepared by the Geigy Chemical Corporation. It has an oral LD_{50} of 108 mg. for male white rats and 76 mg. for female rats (3). This makes it only slightly more toxic by the oral route than DDT but it is much more readily absorbed through the skin and the dermal LD_{50} for rats is 180 mg. of diazinon compared to 2510 mg. of DDT. While it is much less toxic than parathion it must be handled with care and full precautions must be taken during the dipping operation when it is used in a high concentration. The retail cost of a gallon of 25% diazinon-xylene solution in Kamloops in 1957 was $26.00 but we are informed that a considerable reduction in price is anticipated in 1958.

Though diazinon is somewhat more expensive than parathion it would appear to us that its lesser toxicity and ready availability makes it the chemical of choice. The cost of the chemicals is only one factor in the over-all costs of the method.

It is, of course, possible that other chemicals may in the future prove to be superior for fly control either by the cord method or by residual spraying but our present trials have been confined to parathion and diazinon.

Costs of fly control at Tranquille, 1957

The costs of treating approximately 20,000 square feet of space through which very satisfactory control was obtained throughout the whole institution have been estimated as follows:

2 gal. 25% diazinon-xylene solution (approximate) $22.00; 2 gal. 10% parathion-xylene solution $52.00; 6,500 feet—cotton cord (3/16 inch) $25.00; labour dipping cords (14 hours) $17.50 and labour in hanging cords (49 hours) $61.25, making a total cost of $177.75 or approximately $8.88 per 1,000 sq. ft. The above costs would have been lessened had the chemicals and cord been purchased at wholesale rates rather than at retail as was the case in these trials.

As a comparison it may be noted that Tranquille Sanatorium had expended $92.65 and $150.60 respectively in the two preceding years for fly control chemicals for the barns and piggery alone. This does not take into account the very considerable labour costs involved in spraying operations or the costs of control measures in the sanatorium buildings. These expenditures had failed to secure control.

Coloured cords

It has been reported (5) that coloured cords are more attractive to flies than white cords and that red is the best colour. One batch of our cords was dyed by being dipped in Tintex Dye (American Beauty), dried, and subsequently dipped in the chemical solution. Another small batch of cord was dyed a deep red by adding "Zephiran Tint" directly to the chemical solution at the time of dipping. As the white cords gave efficient control in our trials we are unable to comment on the value of coloured cords. If cords were to be produced in quantity it would probably be wise to dye them red.

Summary

An account has been given of trials on the control of flies through the use of cords impregnated with parathion and diazinon after the method of Kilpatrick and Schoof. These trials were conducted at Tranquille Sanatorium, Kamloops, B.C. during the summers of 1956 and 1957. Though no original work was done we believe this to be the first published account of a trial of this method in Canada.

- The use of cords impregnated with parathion or diazinon has proven remarkably efficient in the control of flies under difficult conditions in British Columbia.
- One application of cords impregnated with either of these chemicals appears to be effective over an entire fly season in British Columbia.
- The method (provided proper precautions are taken during the dipping of the cords) would appear to be entirely safe and much more efficient than any other method presently used.
- The costs, considering that one application is effective over an entire fly season, are probably considerably less than the costs of repeated spraying and/or fogging.
- Adequate dosage (30 lineal feet of cord per 100 square feet of area) is important.
- We do not recommend that individual users prepare their own cords. It would be preferable to have commercial companies, working under properly controlled conditions, prepare the cords and sell them to the users with full directions as to the precautions to be taken in hanging them. It has come to our attention that such commercially prepared cords are available in the United States (6, 7), and Canada (8).
- We do not recommend the use of impregnated cords in areas where food is prepared. There might be a danger of the cords becoming loosened and falling into the food.

ACKNOWLEDGMENTS

We wish to acknowledge the great assistance which has been given to us in these trials by a large number of persons. Mr. J. D. Gregson and Mr. L. C. Curtis of the Dominion Entomological Laboratory, Kamloops, have given us much advice and have directed our attention to reports of previous work. Dr. G. S. Cooper, Senior Technical Officer, North American Cyanamid Company, Toronto, kindly supplied us with technical parathion used in these trials both years. The Chipman Chemical Company, Edmonton, kindly supplied the diazinon used in 1956. The superintendent, farm manager, and staff of Tranquille Sanatorium gave us their fullest co-operation and supplied the necessary labour. The officials of the Health Branch, Victoria, have given us every help and encouragement.

REFERENCES

1. Kilpatrick, J. W. and Schoof, H. F.: Pub. Health Reps. 1956, *71:* 144.
2. Fay, R. W. and Lindquist, D. A.: J. Econ. Entomolgy, 1954, *47:* 975.
3. W.H.O., Technical Report, No. 114.
4. Kilpatrick, J. W. and Schoof, H. F.: Pub. Health Reps. 1956, *71:* 144.
5. Fay, R. W. and Lindquist, D. A.: J. Econ. Entomolgy, 1954, *47:* 975.
6. Alpha Products Co., 1025 Connecticut Avenue, Room 715, Washington 6, D.C.
7. Fly-Cord, Inc. P.O. Box 2006, Savannah, Georgia.
8. Seven Oaks Manufacturing Co., 262 Main St., Winnipeg, 1.

Canadian Journal of Public Health

EDITORIAL BOARD

R. D. DEFRIES, C.B.E., M.D., D.P.H., LL.D., *Editor*

J. T. PHAIR, M.B., D.P.H., *Associate Editor* CYNTHIA PALMER, B.A., *Editorial Assistant*

Advisory Editorial Board: J. H. BAILLIE, M.D., D.P.H.; GORDON BATES, M.D.; A. E. BERRY, M.A.SC., C.E., PH.D.; J. G. CUNNINGHAM, B.A., M.B., D.P.H.; C. E. DOLMAN, M.B., PH.D., D.P.H., F.R.C.P., F.R.S.C.; EDNA L. MOORE, REG.N., LL.D.; G. D. PORTER, M.B.; A. H. SELLERS, B.A., M.D., D.P.H.; F. O. WISHART, M.A., M.D., D.P.H.; J. WYLLIE, M.A., M.D., CH.B., B.SC., D.P.H.

EPIDEMIOLOGICAL SERVICES IN THE DEPARTMENT OF NATIONAL HEALTH AND WELFARE

THIS Division was established in 1937 with Dr. Chester P. Brown as Director. Considerable progress was made in the development of a co-operative program with the provincial departments of health. Special surveys were made on Rocky Mountain Spotted Fever, Tularemia and Sylvatic Plague. Plans, however, came to an abrupt end with the outbreak of World War II. Before resuming the program, the Rockefeller Foundation was requested to conduct a study of the place of this division in public health in Canada and also its relation to the Laboratory of Hygiene. This survey was made by Doctors D. F. Milam and W. A. McIntosh and the report presented in 1947. The recommendations have been of great value and have been largely implemented. The Division has demonstrated, fully, its importance in developing with the provincial departments of health effective measures for the control of epidemic diseases. In the past three years the Division has rendered a highly important service in collecting all information concerning the incidence of and mortality from poliomyelitis in Canada and the use of the Salk Vaccine. The center has collected data concerning the vaccination status of all cases and deaths of poliomyelitis. It is of interest that there were 171 cases of paralytic poliomyelitis reported in Canada during 1957 and of this number 2 had received one dose of Salk Vaccine, 8 had received two doses and there were 4 cases among those who had received three doses.

The subject of reporting of communicable diseases has received much attention. A federal-provincial conference of communicable disease control directors was held in May 1955. Subsequently, a list of notifiable diseases of public health importance was adopted which all provinces agreed should be reported by individual occurrence. The agreement in regard to this list was an important step in unifying control measures throughout Canada.

It was felt that as a supplement to routine reporting of specified notifiable diseases by individual occurrence, some method of surveillance of epidemic and unusual forms of diseases should be developed. To accomplish this, it was agreed that a report form should be prepared for this particular purpose. The diseases to be reported as epidemic include all those that normally occur in epidemic form, e.g., measles, influenza, infectious hepatitis and food poisoning,

etc. A disease is considered epidemic when its prevalence materially exceeds the seasonal norm for a particular locality. However, one or more cases of a disease such as smallpox, psittacosis or anthrax justifies a report immediately. Reports are sent as soon as an epidemic or an unusual situation is recognized and not at the usual weekly intervals. These reports state the location and size of the outbreak, the distribution of the disease by age or occupational group with a clinical description. The Epidemiology Division receives these reports and in turn quickly informs the provincial departments and others who may be interested. In the short time that the plan has been in operation reports have been received from a number of provinces. Most of the reports have been concerned with epidemic influenza and from these a weekly summary has been distributed during the recent outbreak. Reports of aseptic meningitis, psittacosis, infectious hepatitis, shellfish poisoning and other diseases have been received and forwarded.

Epidemiology is not confined to communicable diseases. There is increasing concern about our defence against biological warfare and last December a special committee met to review existing methods of obtaining information about diseases of potential biological warfare significance. There are, too, the challenges of alcoholism, diabetes and other chronic diseases. Epidemiological studies of these public health problems are greatly needed and the Division of Epidemiology has a great future.

ONTARIO PUBLIC HEALTH ASSOCIATION

Ninth Annual Meeting

September 29–October 1, 1958

King Edward Sheraton Hotel
Toronto

G. T. Mitton, D.D.S., D.D.P.H.
President

R. B. Sutherland, M.D., D.P.H.
Secretary-Treasurer

Lost-Time Morbidity Experience in Some Industries in Ontario During 1956

Fifteen companies in Ontario collected data on morbidity absences among their employees during the calendar year 1956 using one or other of the three absence recording systems designed by the Divisions of Industrial Hygiene and Medical Statistics, Ontario Department of Health.

All three systems provided for the collection of data on absences of one full day or longer due to sickness or accident which commenced during the year 1956, and the calendar days lost by these absences up to March 31st, 1957. Each system furnished figures on absences and days lost by sex, with a further breakdown by class-division, and by broad duration group.

A summary of the total morbidity rates for each company, and for all companies combined, is given in Table I. Each reporting Company is designated according to the Classification of Industry published by the Dominion Bureau of Statistics. Rates for the combined experiences are computed from the following data: Male staffs–5,618; absences–4,067; days lost–30,085. Female staffs–2,834; absences–6,387; days lost–28,491.

TABLE I—Experience of 15 Companies Reporting Lost-time Morbidity Summary of Rates, by Sex — Calendar Year 1956

Reporting Company*	Annual Number of Absences per 100 Persons		Annual Number of Days Lost per Person		Average Numbre of Days Lost per Absence	
	Male	Female	Male	Female	Male	Female
1. Paper Products	55	108	5.0	8.2	9.2	7.6
2. Chemical Products	51	115	5.7	12.5	11.2	10.9
3. Electrical Apparatus	97	369	2.9	17.7	3.0	4.8
4. Electrical Apparatus	84	134	6.2	14.6	7.5	10.9
5. Printing & Publishing	86	228	5.4	8.4	6.2	3.7
6. Paper Products	80	218	4.1	8.4	5.1	3.8
7. Miscellaneous Mfg.	56	177	4.2	10.8	7.5	6.1
8. Food & Beverage	59	134	7.0	7.4	11.9	5.5
9. Rubber Products	76	215	7.7	14.6	10.1	6.8
10. Electrical Apparatus	73	230	4.8	10.0	6.6	4.3
11. Clothing	44	121	1.8	7.3	4.1	6.1
12. Iron & Steel Products	59	104	3.7	6.6	6.3	6.3
13. Finance & Insurance	113	317	4.7	10.1	4.2	3.2
14. Iron & Steel Products	67	310	3.1	10.0	4.6	3.2
15. Food & Beverage	84	150	10.3	8.0	12.2	5.3
Average	72	225	5.4	10.1	7.4	4.5

*Numbers 1 to 7 Hand Tabulation Card system, 8 to 12 Marginal Punch Card system, 13 to 15 Dual-Purpose Punch Card system.

Morbidity rates for all companies combined are set out in Table II by class-division (i.e., non-occupational sickness, occupational sickness, non-occupational accident, occupational accident).

TABLE II—COMBINED EXPERIENCE OF 15 COMPANIES REPORTING LOST-TIME MORBIDITY BY CLASS-DIVISION AND SEX — CALENDAR YEAR 1956

Class-Division	Annual Number of Absences per 100 Persons			Annual Number of Days Lost per Person			Average Number of Days Lost per Absence		
	Male	Female	Both	Male	Female	Both	Male	Female	Both
Non-occupational sickness	65	220	117	4.2	9.4	5.9	6.4	4.3	5.1
Occupational sickness	1	*	1	0.1	*	0.1	20.9	*	20.2
Non-occupational accident	4	4	4	0.5	0.4	0.5	12.8	10.5	12.0
Occupational accident	2	1	2	0.6	0.3	0.5	22.2	18.1	21.3
Total	72	225	124	5.4	10.1	6.9	7.4	4.5	5.6

*Rate not computed for less than either 10 absences or days.

Morbidity rates for all companies combined are presented in Table III by broad duration group (i.e. under 8 days, 8 days and over).

TABLE III—COMBINED EXPERIENCE OF 15 COMPANIES REPORTING LOST-TIME MORBIDITY BY DURATION AND SEX — CALENDAR YEAR 1956

Duration	Annual Number of Absences per 100 Persons			Annual Number of Days Lost per Person			Average Number of Days Lost per Absence		
	Male	Female	Both	Male	Female	Both	Male	Female	Both
Under 8 days	58	204	107	1.4	4.4	2.4	2.4	2.2	2.3
8 days and over	15	21	17	4.0	5.6	4.5	27.4	26.2	26.9
Total	72	225	124	5.4	10.1	6.9	7.4	4.5	5.6

These data are presented for information and reference. It is emphasized that all of the morbidity rates are crude rates in the sense that they are not corrected for differences between the companies in respect of such factors as age and type of work which are known to affect morbidity experience. Comparison of any of the three morbidity rates for any two companies, or for any company with the rate for the group as a whole, should not be made without due consideration of this fact. With this important reservation, the figures should be of more than passing interest.

Division of Industrial Hygiene and Division of Medical Statistics,
Ontario Department of Health.

The Canadian Public Health Association

Annual Report

1957-1958

PART I

REPORT OF THE HONORARY SECRETARY

G. W. O. Moss, M.D., D.P.H.

ALTHOUGH THE FISCAL YEAR of the Association is the calendar year, the report of the Honorary Secretary customarily covers the period between the annual meetings, the one occasion when it is possible for the Executive Council of the Association to meet. With the exception of the Honorary Treasurer's report which is based on the auditor's statement for the fiscal year, other records in this annual report for 1957–1958 cover the period between meetings.

The forty-fifth annual meeting was held in Toronto in conjunction with the eighth annual meeting of the Ontario Public Health Association. Many members of the State and Provincial Health Authorities of North America whose meeting immediately preceded ours remained to attend our sessions. As in previous years, the annual meeting proved to be an outstanding scientific, administrative and social success. It was indeed a pleasure to be able to extend to the many members of the Ontario Public Health Association who played active roles in planning this meeting, the thanks of the national membership as expressed in a resolution adopted at the close of the meeting. The burden of the detailed planning and organization of the annual meetings has been increasingly placed upon our provincial associations in recent years. The responsibility has been cheerfully accepted and successfully undertaken in every instance.

We anticipate a very successful meeting this year in Vancouver. The Honorary Secretary has been kept closely informed of the progress of the planning committees formed by the British Columbia Branch and knows that no stone has been left unturned in an effort to make this, our forty-sixth annual meeting, a memorable one. In addition, this year we welcome the participation of our colleagues of the Western Branch of the American Public Health Association who are meeting conjointly with us. So, to the joint planning groups, many thanks are extended on behalf of our Executive Council and membership.

Reports presented at the forty-sixth annual meeting of the Canadian Public Health Association, held in Vancouver, B.C., May 19–22, 1958.

The 1959 meeting will be held in Montreal on June 1, 2 and 3 in conjunction with the annual meeting of La Société d'Hygiene et de Médecine Préventive de la Province de Québec. Considerable work has already been undertaken on this meeting relating chiefly to arrangements with the Sheraton-Mount Royal Hotel where the meeting is to be held. In 1960, it is planned to meet in Halifax conjointly with our Atlantic Branch during the week of May 30. Preliminary discussions have been held with the Nova Scotian Hotel concerning this meeting. Although it is intended to meet with the Saskatchewan Branch in 1961, no definite plans have yet been made.

The final act at any annual meeting is the passing of the badge of office from the retiring President of the Association to his successor. At the conclusion of the forty-fifth annual meeting in Toronto, Dr. L. A. Pequegnat performed this duty and introduced to the final assembly the new President, Dr. S. Stewart Murray, Senior Medical Health Officer, Metropolitan Health Committee, Vancouver, B.C. Dr. Murray has been a loyal and faithful supporter of the Association for many years and has actively participated in the work of the Association through the Executive Council. Few will be able to recall a year when Dr. Murray was not present at an annual meeting. It is indeed a pleasure to acknowledge this service to our Association. As President of the Association, he has taken a direct hand in operations. Although the distance between Vancouver and the national office is great, he has kept in very close touch and even found an occasion to preside over the Executive Committee at a meeting in Toronto in the fall.

It is gratifying to report that the work of the Association is being carried more and more by committees. Detailed reports of their work will be found in this Annual Report. Although the Honorary Secretary is spared the duty of writing of this work, the office of Honorary Secretary is represented on most committees. It perhaps should be noted that there does not appear to be any sign of decrease in the amount of correspondence nor supervisory duties which are handled by the Honorary Secretary.

Of utmost importance to the Association was the formation, at the last annual meeting, of a special committee to study the aims and needs of the Association. Under the capable leadership of Dr. K. C. Charron of Ottawa, this committee has met on two occasions. Moreover, Dr. Charron has corresponded with all members of the Executive Council and the executives of the provincial associations and branches. The other members of the committee have been Dr. Jules Gilbert of Montreal, and Dr. W. G. Brown of Toronto. This committee has included in its meetings the officers most closely connected with the national office, namely the Honorary Secretary, Honorary Treasurer, and Editor of the Journal. The report of this committee will demand the deepest consideration of the members of the Executive Council upon its presentation to Council at this meeting.

The Committee on Membership in co-operation with the provincial associations and branches has participated in an intensive campaign to enrol the maximum number of public health workers. Several brochures and other printed articles were prepared by the national office for this campaign.

Dr. James M. Mather, Professor of Public Health, Faculty of Medicine,

University of British Columbia, Vancouver has accepted the Chairmanship of the Committee on Professional Education and in his report outlines plans for the reorganization of this important committee.

The Laboratory Section will henceforth contribute to the program of the annual general meeting, and as well, will continue to hold its separate specialist Christmas meeting. Details of this policy appear in the Report of the Laboratory Section.

The Association again wishes to express its appreciation to Dr. A. J. Rhodes, Director of the School of Hygiene, University of Toronto, who has approved the use of space in this building by the Association. This generous support spares the Association a considerable sum in the cost of office accommodation.

All of the officers of the Association serve without salary or honorarium. The general work of the Association is carried by a salaried staff of two full-time and one part-time members. Mrs. Cynthia Palmer, B.A. devotes almost all of her time to the Journal in her capacity as Editorial Assistant. Miss Ruth Roness, in the role of office assistant, attends to most of the general correspondence. Her skills in stenography, typing and book-keeping are fully utilized. Mrs. Olive Munro has remained with the Association on a half-time basis following the revision of the salary survey, and is giving most of her time to the membership and Journal subscription lists. The officers of the Association wish the membership to know of their dependence on this staff and wish to express their gratitude to them for the faithful performance of duties.

REPORT OF THE HONORARY TREASURER

William Mosley, M.D., D.P.H.

OPERATIONS FOR THE FISCAL YEAR ending December 31, 1957 show an excess of expenditures over revenue of $1,449.58. This deficit is the first in four years. It is accounted for by the printing of material used for the membership campaign and by the increase in the cost of printing and distributing the Journal, as well as the cost of the salary survey and the slight increase in salaries.

It is gratifying that the federal government and nine of the provinces have continued to express appreciation of the Association by meeting the cost of certain services rendered by the Association. Alberta has assisted through the Alberta Division of the Association.

The fundamental need of the Association for reserve funds which was pointed out in the 1956 report is still considered to be important. This was being met through the accumulation of a small surplus, but with the deficit for 1957, it can be seen that this small reserve fund might easily be liquidated in a relatively short time unless our income can be increased.

I would urge that every effort be made to increase the income of the Association through soliciting the support of industry and various agencies as sustaining members (or some other acceptable title) and also through the enrolment of an increased number of public health workers as members. Plans must be made to strengthen the financial support of the Association. I emphasize this point because the income in 1957 was inadequate and there is no evidence to suggest that the financial situation will improve in 1958 unless new sources of revenue are found.

Schedule A

CANADIAN PUBLIC HEALTH ASSOCIATION
REVENUE AND EXPENDITURE ACCOUNT
FOR THE YEAR ENDED 31ST DECEMBER, 1957

EXPENDITURE

Printing	$17,502.87
Postage on Magazines and Mailing Cost	926.69
Honoraria	155.00
Salaries	6,736.25
Travelling	336.69
Stationery and Office Supplies	359.41
Postage, Telephone and Express	615.53
Unemployment Insurance	71.36
Commissions Paid	715.18
Annual Meeting	3,696.20
Laboratory Section	737.90
Sanitary Inspectors' — Examinations	107.37
— Manuals	75.00
— Correspondence Course	324.50
Reprints	1,427.75
Salary Survey	325.93
Committee on Membership	475.28
Miscellaneous Expenses	616.17
Provision for Depreciation:	
Office Furniture and Equipment	180.94
Bad Debts Written Off	—
Discounts and Exchange	196.39
	$35,582.41
	$35,582.41

REVENUE

Advertising		$ 6,538.45
Subscriptions — less Refunds		2,914.37
Membership		2,611.00
Fees for Services Rendered —		
Dominion of Canada	$ 5,000.00	
Province of Ontario	2,500.00	
Province of Quebec	1,200.00	
Province of British Columbia	800.00	
Province of New Brunswick	600.00	
Province of Manitoba	700.00	
Province of Saskatchewan	700.00	
Province of Nova Scotia	600.00	
Province of Prince Edward Island	100.00	
Province of Newfoundland	100.00	
Alberta Division — C.P.H.A.	600.00	12,900.00
Annual Meeting		4,194.60
Laboratory Section		728.45
Sanitary Inspectors' — Examinations		835.00
— Manuals		228.00
— Correspondence Course		980.00
Reprints		1,617.58
Interest on Investments		200.00
Interest on Savings Bank Account		385.38
		$34,132.83
Excess of Expenditures over Revenue for the Year transferred to Surplus Account		1,449.58
		$35,582.41

CANADIAN PUBLIC HEALTH ASSOCIATION
BALANCE SHEET
AS AT 31ST DECEMBER, 1957

ASSETS

Cash on hand		$ 30.00	
Cash in bank — Current	$ 1,984.13		
— Savings	11,818.34	13,802.47	
Accounts Receivable	$ 3,963.94		
Less: Allowance for Bad Debts	35.00	3,928.94	
British Columbia Public Health Advance		100.00	
Deposit with Postmaster		20.00	$ 17,881.41
Investments — Province of Ontario Bonds 4% — 1961			5,000.00
Canadian Journal of Public Health		$ 1,000.00	
Office Equipment	$ 1,925.03		
Less: Accumulated Depreciation	1,925.03	—	1,000.00
Prepaid Expenses			708.46
			$24,589.87

LIABILITIES

Accounts Payable			$ 1,733.74
Prepaid Subscriptions			323.00
Surplus			
Balance as at 31st December, 1956		$ 23,982.71	
Deduct			
Excess of Expenditure over Revenue for the Year		1,449.58	
Balance as at 31st December, 1957			$ 22,533.13
			$ 24,589.87

Submitted with our report of this date attached.

TESKEY, PETRIE & BURNSIDE,
Chartered Accountants.

TORONTO, Ontario,
12th March, 1958.

CANADIAN PUBLIC HEALTH ASSOCIATION
COMPARATIVE BALANCE SHEET

ASSETS

	31st Dec. 1957	*31st Dec. 1956*	*Increase*	*Decrease*	*Net Plus or Minus*
Cash on hand	$ 30.00	$ 25.00	$ 5.00	—	
Cash in Current Account	1,984.13	1,233.18	750.95	—	
Cash in Savings Account	11,818.34	15,232.96	—	$ 3,414.62	
Accounts Receivable Less Allowance	3,928.94	2,604.92	1,324.02	—	
B.C. Public Health	100.00	100.00	—	—	
Postmaster	20.00	20.00	—	—	
Investments	5,000.00	5,000.00	—	—	
Canadian Journal of Public Health	1,000.00	1,000.00	—	—	
Office Equipment Less Depreciation	—	—	—	—	
Prepaid Expenses	708.46	446.06	262.40	—	
	$24,589.87	$25,662.12	$ 2,342.37	$ 3,414.62	$ 1,072.25

LIABILITIES

Accounts Payable	$ 1,733.74	$ 1,344.41	$ 389.33		
Prepaid Subscriptions	323.00	335.00	—	$ 12.00	$ 377.33
As per Revenue and Expenditure Account					$ 1,449.58

REPORT OF THE EDITORIAL BOARD

R. D. Defries, C.B.E., M.D., D.P.H., LL.D., Editor

J. T. Phair, M.B., D.P.H., Associate Editor Cynthia Palmer, B.A., Editorial Assistant
Advisory Editorial Board: J. H. Baillie, M.D., D.P.H.; Gordon Bates, M.D.; A. E. Berry, M.A.Sc., C.E., Ph.D.; J. G. Cunningham, B.A., M.B., D.P.H.; C. E. Dolman, M.B., Ph.D., D.P.H., F.R.C.P., F.R.S.C., Edna L. Moore, Reg.N., LL.D.; G. D. Porter, M.B.; A. H. Sellers, B.A., M.D., D.P.H.; F. O. Wishart, M.A., M.D., D.P.H.; J. Wyllie, M.A., M.D., Ch.B., B.Sc., D.P.H.

THIS ANNUAL REPORT is the twenty-ninth which the Editor has had the privilege of presenting. During these years the Journal has grown in stature as a scientific journal, finding a place on the shelves of more than 400 libraries in universities, hospitals and other institutions. The Journal is now in its 49th volume and next year will celebrate its jubilee. The Association has a rich heritage in its Journal.

Before reviewing the progress of the Journal during the past year, it may be helpful to state, again, the objectives which are kept in mind in editing the Journal. These objectives are the publication of scientific papers which present new knowledge, define problems, outline programs and review progress. Further, keeping in mind the interests of the individual groups composing the Association, the endeavour is made to publish each month at least one article in each of the fields of administration, nursing, environmental sanitation, laboratory work and medical care. The latter subject includes hospitalization, chronic diseases and rehabilitation. As many papers as possible are published in mental health, dental health, health education, industrial hygiene and other important fields of public health. Valuable as articles are, the Journal is appreciated also by its readers for its editorials, book reviews, Association news and news of public health across Canada.

Criticism is sometimes made of the Journal, particularly by those who confine their reading in public health to the narrow limits of their own work, that the Journal "has nothing of interest to them". Last year in the 12 issues, 82 papers were published, either as separate articles or grouped together as symposia. It is of interest that 27 of these were in the field of administration, including communicable diseases and vital statistics. Nineteen of the papers published related to the field of medical care, including the presentation of problems of chronic diseases, aging and rehabilitation. Eleven papers were published in public health nursing, including health education; 9 in environmental sanitation; 3 in dental health; 3 in mental health; 5 in laboratory work, together with the abstracts of 19 laboratory papers presented at the Christmas meeting of the Laboratory Section, and 5 papers related to veterinary public health. In regard to authorship of papers, 40 were contributed by physicians, approximately half being written by non-medical members. An analysis would show, too, that papers were published from members of all the provincial divisions and associations, thus representing the whole of Canada. During the

year, the Journal devoted 56 pages to Association reports and news of the provincial divisions of the Association. Recognizing the interest of the membership in the news column, 32 pages were devoted to the presentation of personals and news items from all the provinces. Twenty-four pages were devoted to editorials. Of special importance was the publishing of the committee's report, *The Recommended Qualifications and Minimum Salaries of Public Health Personnel in Canada.* This was a report of wide interest and reprints were distributed to health departments throughout Canada.

The editing of the Journal requires much time in order to make possible the inclusion, often in abstract form, of the large number of papers approved for publication. In this effort the contributors of papers have been most cooperative in editing their contributions in order to meet the space requirements. Many articles can not be printed as received as the authors have not been familiar with the requirements of the Journal concerning length, the number of tables and charts and the form of presenting a bibliography. To assist those preparing papers, a copy of the requirements of the Journal entitled *Suggestions to Authors* has been sent to all presenting papers at meetings at the same time inviting them to offer their papers to the Journal for consideration by the Editorial Committee. In addition to papers presented at annual meetings, the policy is being followed of presenting papers in fields of special interest by arranging with those best qualified to prepare them. This reduces the number of papers which can be published from annual meetings, but increases the value of the Journal to its readers.

It would appear, therefore, that the Journal, within the compass of its present size is achieving its objectives. Financial considerations are of increasing importance each year. During the past year, it has cost between $25 and $30 per page to print the Journal, a cost of more than five cents a word. Through editorial revision, important savings have been made and it has been possible also to include an additional article in each issue of the Journal.

In regard to the cost of publishing the Journal, printing charges have again increased amounting to $18,429.56 including the distribution costs. This amount compares with $17,028.76 for the last year. Every effort has been made to keep the costs as low as possible.

During the year the circulation of the Journal has been substantially increased. This increase in circulation is partly responsible for the increase in printing costs. In March 1957, 3,150 copies were printed and in March 1958, 3,650 copies were printed. This reflects the increased membership of the Association as a result of the national enrolment campaign. From December 1955 to December 1957 the total circulation of the Journal was increased by approximately 20%. In the year 1956 the cost of the Journal for 12 issues was $6.08 per volume. In 1957, the figure was $5.66. The lower cost per volume was due to the increased number of copies printed, although the total cost of printing was substantially higher. Further increases in circulation are desired so the advertising revenue can also be increased. This revenue amounted to $5,823.27 in 1957, an increase of $545.60 over 1956. As a minor measure of assistance, the subscription rate for the Journal distributed outside Canada has been raised, effective June 1, 1958, to $5.00 per annum. The problem of

library subscriptions in many foreign countries is a difficult one owing to exchange rates and for that reason, the increase even to $5.00 will result in a larger number of requests for free subscriptions in return for the sending of various public health publications from these countries. A fund which would permit the Journal to be sent to university and other libraries in needy foreign countries would permit the presenting of the progress of Canadian public health work in many lands.

In closing this report, I wish to record appreciation of the excellent services of Mrs. Cynthia Palmer, B.A. as Editorial Assistant. In addition to her responsibilities in the central office, she has given many hours of extra time to making possible the exacting printing schedule of the Journal and caring for all the details of its publication. In this work, Mrs. Palmer has been ably assisted by Miss Ruth Roness. Mrs. Olive Munro has served part-time in maintaining the membership role of the Association and in preparing the mailing lists each month.

ASSOCIATION NEWS

Saskatchewan Branch

The Saskatchewan Branch of the Canadian Public Health Association held its annual meeting on April 11 and 12. Nearly 250 persons registered for the meeting, 205 of whom were members of the association. Mr. W. Baker, consultant to the Department of Natural Resources on Recreation Land Use gave an address entitled Recreation Land Use in Relation to Public Health. Mr. Francis Huxley, an anthropologist doing research at the Saskatchewan Hospital, Weyburn, Mr. Stanley Rands, Deputy Director of Psychiatric Services, and Rev. K. Bergsagel, Director of the Lutheran Sunset Home in Saskatoon, gave addresses on Aging in a Modern World. The meeting also featured a joint meeting of the Association with the Paediatric and Obstetric Refresher Course for general practitioners. A panel consisting of Dr. S. C. Best of Regina, Dr. Fred Fisher of Grenfell, Miss Irene Hood, P.H.N., of Swift Current, Dr. D. J. Hosking of Prince Albert and Dr. O. E. Laxdal of Regina discussed The Family Doctor and the Health Department.

A resolution asking that the branch endorse Child Safety Day and urge the support and participation of the public of Saskatchewan in the prevention of accidents among children was passed unanimously. The resolution also asked that the accident rate among Canadian children be brought to the attention of the national C.P.H.A. The chairman of the constitution committee, Dr. A. E. Chegwin, presented a draft constitution for the branch. This constitution was accepted by the members with minor amendments.

Two delegates, Mrs. H. J. Kernen, past president of the association and Mr. E. L. Abbott, secretary-treasurer, were selected as delegates to the annual meeting of the CPHA. The new executive of the branch is as follows: Honorary President, Hon. J. Walter Erb; Past President, Mrs. H. J. Kernen; President, Miss Louise Miner; Vice President, Dr. Hugh Robertson; Secretary-Treasurer, Mr. E. L. Abbott;

other members: Mr. A. A. Ball, Mr. R. D. Archer, Mr. C. P. Feader, Dr. M. K. Dehnel, Dr. F. J. Porth, Mrs. Shirley Kerr, Miss Lorraine Miller, Miss Vera Spencer, Dr. George Kinneard, Dr. D. E. Rodger, Mr. William Kempa.

New Brunswick-Prince Edward Branch

Much interest and enthusiasm was noted at the Sixth Annual Meeting of the Canadian Public Health Association, New Brunswick-Prince Edward Island Branch, held in Charlottetown on April 24. Four officials from the Atlantic Branch were also present including the president, Dr. J. C. Wickwire, of Liverpool, Nova Scotia. The president of the N.B.-P.E.I. Group, Miss Mona Wilson, R.N., Director of Nursing, P.E.I. Department of Health, presided. Dr. M. L. Bonnell, Minister of Health, welcomed the delegates.

The theme of the Branch meeting was "Design for Action" and those presenting papers in the different fields of public health were asked, in the light of their past and present programs, to forecast the future of public health in the Maritimes and across Canada. Garth C. Crockett, B.S.P.H., M.S.P.H. gave the keynote address and other contributors included Dr. John C. Theriault, Miss Lillian Baird, Reg.N. Mr. Aldor LeBlanc, C.S.I.(C), Miss M. Saint-Hilaire, Rev. R. G. Rowcliffe, F. W. Jelks, Ph.D., Mr. W. W. Reid, Mr. A. J. Cameron, P.Eng.

NEWS NOTES

International

Dr. George Davidson, deputy minister of welfare for Canada, was elected president of the 18-nation UN Economic and Social Council at its annual meeting in April. Dr. Davidson has long been Canada's representative on the council.

Four child welfare congresses will take place consecutively in Brussels during July and August 1958. One of these is of particular interest to health authorities. It is the World Child Welfare Congress to be held from July 20–26 under the auspices of the International Union for Child Welfare. The theme of the conference will be "The Parents' Role in the Child's Development". The subject will be discussed in various sections: the home, parents and the very young child, parents and the pre-school child, parents and the school child, parents and the adolescent, community development projects and the family. Members of the Canadian Public Health Association are most welcome. Information may be obtained from Mrs. J.-M. Small, Deputy Secretary General, International Union for Child Welfare, 1 Rue de Varembé, Geneva, Switzerland.

Federal

The Royal College of Physicians and Surgeons of Canada has announced the results of the 1957 examinations and the certification as specialists of the following candidates: *Specialty of Bacteriology*—Leslie Pittar Lansdown (Manitoba 1925), Winnipeg, Manitoba; *Specialty of Public Health*—Gordon Lincoln Anderson (McGill 1934), Sarnia, Ont.; Agnes Jane Eagles O'Neil (Toronto 1943), Calgary, Alta.; Grant Quentin Sutherland (Toronto 1933), Fergus, Ontario.

The first meeting of the Department of National Health and Welfare's advisory committee on maternal and child health was held in Ottawa on April 21–22 under the chairmanship of Dr. Jean F. Webb, chief, child and maternal health division.

Dr. L. B. Pett, chief, nutrition division, Department of National Health and Welfare, presented a preliminary report on cholesterol levels of Canadian Eskimos at a meeting of the American Institute of Nutrition held in Philadelphia, Pa., in mid-April.

The Dominion Council of Health held its semi-annual meeting in Ottawa on April 28–30.

A national health grant of more than $26,000 was recently approved to assist Newfoundland's Department of Health in expanding its immunization program in areas of that province where immunization operations have been inadequate up to the present because of a shortage of health personnel.

K. C. Hossick, chief, narcotic control division, Department of National Health and Welfare, attended the sessions of the United Nations' narcotic commission in Geneva, Switzerland, in April.

Kingsley Kay, Ph.D., chief of laboratory services occupational health division, Department of National Health and Welfare, recently attended the fifth session of the chemical industries committee of the International Labour Organization in Geneva, Switzerland. Dr. Kay was named chairman of the subcommittee on protection of workers against occupational diseases and poisoning.

Recent visitors to the Department of National Health and Welfare from overseas included Sir Harry Wunderly, former chief of tuberculosis control for the Commonwealth of Australia and now chairman of the inter-service medical advisory committee to the Australian armed services; and Dr. A. Fryberg, director-general of public health and medical services for the state of Queensland, Australia.

A. J. Hiscock, formerly with the Department of National Defence at Churchill, Manitoba, has joined the engineering staff of the public health engineering division, Department of National Health and Welfare, Moncton, N.B.

British Columbia

Dr. John H. Read who is, at present, on the staff of the Department of Paediatrics, University of Michigan, will join the Faculty of Medicine, University of British Columbia, on July 1. Dr. Read, a native of Montreal, will serve as Assistant Professor of Preventive Medicine and Instructor in Paediatrics. Dr. Read graduated in Medicine from McGill in 1950, received his D.P.H., from Toronto in 1952, and served two years as a full-time health officer in Ontario. For the past four years he has been in postgraduate work in paediatrics at the University of Michigan.

Alberta

Alberta's Hospitalization Insurance Scheme went into operation on April 1. A qualified resident of the province is now entitled to receive general ward care in the hospital of his choice for a fee not exceeding $2.00 per day. Maternity care, which was formerly free, is now charged for at the same rate as general ward care.

A new amendment to the Health Unit Act provides for a change in the system of financial support for health units. Instead of paying 60% of an approved budget, the Departments of Public Health will give a grant to each health unit at a per capita rate depending upon its population. The contributing municipalities must match this grant with not less than two-thirds of the amount provided by the Province. This arrangement will enable the Health Unit Board to have a freer hand in the management of their affairs.

Dr. Geoffrey Bourke, a graduate of the National University of Ireland, has been appointed Medical Officer of Health of the Minburn-Vermilion Health Unit in place of Dr. Brian Russell, who moved to Ontario.

Saskatchewan

A course in postgraduate paediatrics and obstetrics, sponsored by the Regina and District Medical Society, the College of Medicine of the University of Saskatchewan, the Department of Public Health and the College of Physicians and Surgeons was held at the Regina General Hospital April 10, 11 and 12. Special guest speakers were Mr. John Stallworthy, Regional Director of Obstetrics and Gynaecology, Oxford District, England; Dr. Russell Blattner, Professor of Paediatrics, Baylor University, Texas; Dr. Albert B. Brown, Professor of Obstetrics and Gynaecology, and Dr. John Gerrard, Professor of Paediatrics, both of the University of Saskatchewan.

Manitoba

The necessary legislation has been passed authorizing Manitoba to participate with the Federal Government in a hospital insurance plan which it is expected will begin to operate July 1. This would be a compulsory plan for all residents, based on a premium system payable by payroll deduction for employed groups and through the municipality for self-employed or other groups. For the first benefit period, July 1 to December 31, the government is providing hospital certificates without payment of premium—that is, the service will be free for the first six months.

Sponsored by the Manitoba Department of Health and Public Welfare, the third water works and sewage plant operators course was conducted in Winnipeg from March 11 to April 3, with a total enrollment of 43. The subjects included: basic arithmetic, calculations, basic chemistry, bacteri-

ology of water and sewage, operation of water treatment processes, general types and kinds of sewage treatment systems, and stream pollution control. An illustration of practical work was presented through field trips to various equipment companies, foundries, and municipal work shops. The course was under the direction of T. H. Lackie, Senior Public Health Engineer with the Manitoba Department of Health and Public Welfare, assisted by J. Warrener, W. Ward and A. Sparling, also of the Department.

A presentation was made to Miss Ann Armstrong, P.H.N. in the V.D. Control Clinic, St. Boniface Hospital, on the occasion of her retirement from the Department, which she joined in 1927. Miss J. Williamson, Director of Nursing for the Province, paid tribute to the fine contribution made by Miss Armstrong in the field of public health.

To encourage the use of better fish production methods in the province, the Manitoba Department of Health and Public Welfare, has compiled a special bulletin, directed to native fishermen, in the Cree language. The translation was done by Rev. Horsfield, of Pilot Mound, who for many years worked among the Cree people.

Among those enrolled in the 1958 course for Sanitary Inspectors, currently being conducted at the Manitoba Technical Institute, are two Maritimers, R. G. McNeil, and J. G. MacLean, from Halifax, N.S.

In response to requests from industry and from home safety study groups, the Manitoba Department of Health and Public Welfare has prepared a pamphlet which presents the dangers of carbon tetrachloride and recommends the use of safer solvents such as methyl chloroform.

Ontario

Ontario Department of Health Chief Statistician Dr. A. H. Sellers recently returned from a committee meeting of the World Health Organization in Paris, France. Dr. Sellers joined other members of the Committee on Clinical Stage Classification and Applied Statistics of the Research Commission section of WHO in focusing attention on the development of an agreed international basis for the classification of malignant neoplasms. Also under study were various methods of analysis of results of treatment. Ten different countries were represented at the conference.

Dr. Elizabeth N. MacKay has returned to the Division of Medical Statistics, Ontario Department of Health following two years leave of absence during which time she held a special temporary appointment in public health statistics in Bogota, Colombia under the sponsorship of the Pan-American Sanitary Bureau, Regional Office of the World Health Organization. Dr. MacKay will continue to devote full time to the work of the Division of Medical Statistics and the Ontario Cancer Treatment and Research Foundation in the field of cancer records and statistics.

Noise as the cause of absenteeism in industry was the theme of the recent display sponsored by the Ontario Department of Health's Division of Industrial Hygiene at the Industrial Accident and Prevention Association exhibition held at Toronto's Queen Elizabeth Building. Considerable interest is being shown across Canada on the effect of noise as a causative factor in the loss of hearing and its adverse effect on production.

Quebec

A province-wide hospital association has recently been formed in Quebec. The four existing groups which had formerly directed communication between hospitals and government officials united in the Quebec Hospital Association. The new body will negotiate with provincial and municipal health authorities on behalf of the hospitals of the province.

New Brunswick

The annual meeting of Provincial Health Department Directors and Medical Health Officers took place at the Moncton Tuberculosis Hospital on April 22 and April 23. Following this meeting, a number of the directors and health officers moved on to Charlottetown for the N.B.–P.E.I. Branch meeting of the Canadian Public Health Association held on April 24.

Dr. J. A. Melanson, Chief Medical Officer, was chairman of the Directors' meeting at Moncton and Health and Social Services Minister, Hon. Dr. J. F. McInerney provided the opening remarks. Communicable Diseases Control Director, Dr. A. F. Chaisson reported on the poliomyelitis program, biologicals, and typhoid and staphylococcal infections. Mr. A. J. Cameron, Provincial Sanitary Engineer, discussed the Water Resources and Pollution Control Board. Dairy Farm Regulations and Regulations for Homes for the Aged or Infirm were explained by Mr. A. E. Wilby, Assistant Registrar General of Vital Statistics. Dr. C. W. Kelly spoke on Federal Health Grants and Hospital Insurance. Other Directors who reviewed the work of their Divisions included: Dr. G. E. Maddison, Assistant Chief Medical Officer and Director of Tuberculosis Control; Dr.

R. R. Prosser, Director of Mental Health; Dr. H. A. Bird, Director of Provincial Laboratories; G. W. Crandlemire, Provincial Coordinator of Rehabilitation; Dr. R. S. Langstroth, Director of Dental Health, and Miss Muriel Hunter, Director of Public Health Nursing.

The official opening of the Forest Hill Rehabilitation Centre on May 2 was highlighted by the holding of the second annual Provincial Rehabilitation Conference as well as the annual meeting of the N.B. Coordinating Council for the Handicapped.

Taking part in the official opening of the Centre were President of the Forest Hill Rehabilitation Centre Inc. Stan B. Cassidy; Hon. Hugh John Flemming, Premier of N.B.; Hon. D. L. MacLaren, P.C., Lieutenant Governor of N.B.; and Rt. Rev. Bishop O'Neill.

At a ceremony in front of the Arthritis Clinic, Fredericton, on April 19, Health and Social Services Minister, Hon. Dr. J. F. McInerney, officially handed over a new mobile unit to the Canadian Rheumatism and Arthritis Society. Accepting the keys of the unit on behalf of the Society was Miss Finlayson, recently appointed physiotherapist, who, with the aid of the mobile unit, will provide at-home treatment to central New Brunswick residents suffering from rheumatism and arthritis.

Nova Scotia

Mrs. Katherine Williams, R.N., rejoined our staff on April 1, 1958, with headquarters in Guysborough.

During the month of April 1958, three nurses joined our staff for a period of in-service training, Miss Nadine Boehner with headquarters in Pictou, Miss Anne Gillis and Miss Pauline MacDougall, with headquarters in Sydney.

Prince Edward Island

Dr. Burton D. Howatt, Health Officer, attended the Maternal and Child Health Advisory Committee meetings held in Ottawa in April.

Municipal and village councils throughout the province are being pressed by the Division of Sanitation to pass resolutions abolishing the sale of raw milk in their communities. The program is beginning to have effect in that Charlottetown, Summerside Montague and Souris have already prohibited the sale of raw milk and several other communities are in various stages of doing so.

Dr. O. H. Curtis, Deputy Minister of Health for Prince Edward Island, is playing a leading role in the planning of a Hospital Insurance Scheme here. Dr. Curtis attended the Institute on Hospital Insurance of the Hospital Services Planning Commission of Nova Scotia at Halifax in the latter part of April. Dr. Curtis then journeyed to Ottawa where he attended the Dominion-Provincial Council of Health Meetings and other meetings on technical aspects of Hospital Insurance.

The resident registered nurses at Riverside have just completed a six month course in mental health nursing. General graduate nursing groups throughout the province were also invited to attend. It is interesting to note that those nurses who took the course, and who subsequently elected to take the State Board Test Pool Examinations arranged by the Prince Edward Island Nurses Association, were all successful in their examinations.

OBITUARIES

Dr. Charles W. J. Armstrong, who participated in the work on Salk polio vaccine at the University of Toronto's Connaught Laboratories, collapsed and died of a heart attack on February 28. He was 42 years of age. Dr. Armstrong was senior member of the staff of the Canadian Medical Research Laboratories at the University. Born in Toronto, he was educated at University of Toronto Schools and was graduated from the University of Toronto in 1936 as a B.A. receiving his M.A. in 1938, his Ph.D. in 1941, and his medical degree in 1945. He served as Surgeon-Lieutenant with the RCNVR during the Second World War and following demobilization was engaged in pharmaceutical research at the Laboratory of Hygiene at Ottawa and with E. R. Squibb and Son in New Brunswick, N.J.

Doctor Pierre-Paul Bouchard, Medical Officer of Health, of La Malbaie, County Health Unit of Charlevoix, Quebec, died on April 1, 1958. Dr. Bouchard entered the public health service on September 1, 1940; the following year he studied at the School of Hygiene of the University of Toronto and he received his D.P.H. in June 1942. For eighteen years, he served the same health unit and through his devotion to duty, a notable improvement of the health of the population and of the sanitary conditions of the municipalities, was achieved.

Books and Reports

AIR POLLUTION. Edited by M. W. Thring, M.A., F. Inst. P., F. Inst. F., M.I.Chem.E. Published by Butterworth & Co. (Canada) Ltd., Toronto. 1958. 248 pp. $8.50.

The University of Sheffield has for a number of years been concerned with the problem of air pollution. In 1956, an air pollution course was given, sponsored by the Department of Fuel Technology and Chemical Engineering. The holding of this course was a further expression of public interest aroused by the tragedy of the London smog of 1952. The following are the major chapters: What is air pollution?, Consequences of air pollution, Dispersion of discharged gases, The elimination of pollution, Grappling with air pollution. Each of these major sections is presented by an authority in the field. Professor M. W. Thring has contributed to the chapters on the elimination of pollution and has edited the volume most carefully.

DRUG RESISTANCE IN MICRO-ORGANISMS. Editors for the Ciba Foundation, G. E. W. Wolestenholme, O.B.E., M.A., M.B., B.Ch. and Cecilia M. O'Connor, B.Sc. Published by J. & A. Churchill, London. Distributed by British Book Service (Canada) Ltd., Toronto 6. 1957. 352 pp. $8.50.

Many readers may not be familiar with the important work conducted by the Ciba Foundation established for the promotion of international co-operation in medical and chemical research by the Ciba Company. At its house in London, England, the Foundation provides accommodation for scientists, organizes conferences, conducts a medical post-graduate exchange scheme and arranges a variety of informal discussions.

This volume is a report of a symposium held in March 1957 under the chairmanship of Sir Charles Harington. The papers presented are supplemented by abstracts of the discussions. The subject is of very great importance and all who desire to have a comprehensive but brief presentation of the subject with an appropriate background will find this volume most helpful. In addition, nine other volumes have been published presenting previous symposia including the nature of viruses, experimental tuberculosis and leukaemia research. Four volumes have been published on endocrinology, and three volumes on chemotherapy and three volumes of subjects of collateral interest. This volume will be widely used and greatly appreciated.

NON-VENEREAL SYPHILIS. Ellis Herndon Hudson, M.D., D.T.M. & H.(Lond), F.A.C.P. Published by Macmillan Co. of Canada Ltd., Toronto. 1958. 204 pp. $5.00.

Dr. Ellis H. Hudson, emeritus professor and director of health, Ohio University, has prepared this monograph relating to ten years of clinical research (1926–36) on non-venereal syphilis. The author speaks of three conditions caused by *Treponema pallidum*: yaws—a non-venereal disease, syphilis—sporadic venereal infection, and endemic syphilis, which is non-venereal. Adoption of the term treponematosis will assure that anti-syphilis and anti-yaws campaigns of the world shall become a combined operation against an old and versatile parasite. The monograph is a most interesting sociological and medical study of this form of syphilis.

AN INTERNATIONAL NOMENCLATURE OF YAWS LESIONS. C. J. Hackett, M.D., F.R.C.P., World Health Organization. Published in Canada by Ryerson Press, Toronto, 1957. 104 pp. $4.00.

National yaws-control campaigns with WHO and UNICEF collaboration have been conducted in Haiti, Indonesia, the Philippines and Thailand. Dr. C. J. Hackett, one of the world's authorities on yaws, in co-operation with an international group of experts, made possible this nomenclature for this disease for international use. This will assist greatly in control programs.